

WILLIAM GOLDSMITH
LONDON

1730. 12. 17. 1792.

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LONDON 1792. 12. 17.

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(AND
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[1st of OCTOBER, 1831, to 31st of MARCH,]

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No. XXXI. JANUARY 1, 1832.

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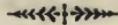
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INTELLIGENCE, CORRESPONDENCE, &c.



PROFESSOR PATTISON.

We are extremely gratified in learning that our transatlantic brethren have healed the wounds inflicted on Mr. PATTISON by his countrymen, by offering him Professorships in two different Universities in the United States. This circumstance speaks volumes as to the talents of Mr. Pattison ; but it speaks more than volumes as to the generosity—the almost CHIVALROUS HONOUR and FEELING of the American Medical Profession ! In this world, and sorry are we to say, in this country, an *unfortunate* man, whatever be his merits, too often receives a blow from every friend, in order to sink him lower in the sea of misfortune ! May glory, fame, and prosperity for ever attend that country, whose HONESTY is not yet engulfed in that sink of mercenary selfishness and corruption which entombed the honour and power of Asia, Egypt, Greece, and Rome—would that we could except modern Europe ! N.B. The London University has acknowledged its injustice, by making Mr. Pattison a pecuniary recompence for his wrongs !!

We have received numerous Letters respecting the Nature and Treatment of Cholera Morbus; but it is impossible, in this number of the Journal, to notice them.

Dr. BOURNE's Letter to Sir Henry Halford we have transmitted to a contemporary journal, as it is too long for insertion. Its contents, however, are important in a therapeutic point of view. His reasons for the exhibition of emetics are excellent; and he will see that the remedy is now recommended by the Board of Health.

Mr. MORGAN, of Woodford, proposes urtication, or friction with nettles, in the state of collapse, with the internal use of ammonia, opium, and aromatics. Friction with the common nettle, he observes, is more exciting in paralysis than any other external application whatever. He has frequently used it.

Dr. UWINS' Appeal in favour of the Widow of the late Mr. THOS. WEBBE, Surgeon, of Cold-bath Square, we are unable to insert. This unfortunate female is 71 years of age, and in great distress. Subscriptions will be received by Dr. UWINS, Bedford Row—Mr. HUNTER, Solicitor, King's Road, Bedford Row, and Mr. MORGAN, Bedford Row.

Mr. SHRAPNELL's paper (with drawings) on the form and structure of the membrana tympani, is under consideration.

Mr. PRESTON on Ligature of the Carotid, for Epilepsy, is received, and will be properly disposed of.

Several communications from our old and esteemed correspondent, Dr. JAMES KENNEDY, of *Ashby de la Zouche*, are received, and will appear in our next number, should the CHOLERA MORBUS spare us so long.

We have been obliged to tax our subscribers, this quarter, with SIXPENCE additional, for 32 pages of closely printed letter-press, EXTRA, containing information worth five times that sum. This, however, will not be repeated.

* * We direct the attention of our readers to the admirable and minute detail, both of the symptoms and pathology of Cholera at Danzig, by Dr. Hamett. It is true that we have published this document somewhat *surreptitiously*, having no authority to do so, from the author nor from the person by whom it was shown to us. We give our enemies (if we have any) full scope for their animadversions on this account. Our general conduct on past occasions, and our motives on this, enable us to lay open a vulnerable point, without much fear of being ruined by the procedure.

THE
Medico-Chirurgical Review,
No. XXXI.

OCTOBER 1, 1831, TO JANUARY 1, 1832.

I.

REPORTS OF MEDICAL CASES, SELECTED WITH A VIEW OF ILLUSTRATING THE SYMPTOMS AND CURE OF DISEASES, BY A REFERENCE TO MORBID ANATOMY. By *Richard Bright, M.D.*
F.R.S. &c. Vol. II. London, 1831.

[Second Article.]

A FEW facts, hastily noticed and imperfectly concocted, have often been worked up into a stupendous fabric, upon which the whole system of medical science has been made to repose; and not seldom has it happened, that laborious codes of therapeutic principles have been spun out of some seducing speculations of the brain, which have neither been supported by ordinary experience, nor even countenanced by an ordinary share of plausibility. Although, therefore, to some it may be the most tedious, it is the most faithful system of therapeutics which is extracted from a well-digested selection of cases. The symptoms of even the most uniform disease so extremely fluctuate, and are chequered by so many modifying causes, that to group within a few lines its pathognomonic features is no ordinary task, and to particularize all its varying lights and shades is utterly impracticable. The general outlines are, no doubt, easily learned, because easily seen; but the finer pencilling requires taste to be discerned, and when discerned requires judgment to make it practically useful.

Every practitioner, therefore, who aims at excellence, will have but little respect for nosological arrangements, distinctions and definitions. As soon as he has opportunity he will read disease with his own eyes out of the original; he will trace at the bedside of sickness, with his own pencil, the devious workings of disordered nature; he will court personal familiarity with every morbid appearance; he will pursue the relations between external signs and internal states through all their labyrinths of intricacy; in fine, he will study the capricious aberrations of disease from the prescribed and general rules, as attentively as her ordinary observance

of the general rules themselves, and he will neither rest contented with the model etchings of another's pencil, nor with the dictatorial delineations of any established school.

This, no doubt, requires both patience and opportunity; an undivided love for the advancement of the profession and an unreserved appropriation of the whole mind to its cultivation; but there can be only one excuse for forming our faith out of the creed of others—when we dare not confide in our own judgment, or our own honesty, in constructing a system for ourselves. To look with our own eyes is more laborious than to see through the eyes of our predecessors, and to test statements, systems and authorities at the fountain from which they were themselves taken, may only tell into the treasury after a course of time; but the experience of upwards of three thousand years has now shown that “*verba magistri jurando*” has much more devotion to recommend it than either industry or judgment. The child, who feels strength sufficient to go forth without support, is only tripped and trammeled by the walking chair; and the sooner that the school-books of a medical practitioner's education are abandoned, after the volume of nature has been fully submitted to his own inspection, the more rapidly will he advance in the true knowledge of disease, and the more faithfully will he be enabled to meet the high responsibilities of his official station. Hippocrates did more for medicine in thirty years than all his successors down to Haller; and when we examine his works and analyze the spirit with which they were constructed, no adequate reason can be found to account for this extraordinary disproportion of success, but his cautious observance of nature and his uniform dread of theory.

In our former article on the Work before us, we brought before our readers Dr. Bright's observations on the *Inflammatory* affections of the head; including erysipelas of the scalp and face, inflammation and suppuration of the ear, arachnitis, delirium tremens, acute and chronic hydrocephalus, inflammation and ulceration of the cerebral substance, softening of the brain, and, finally, the effects of cerebral pressure from vascular turgescence. Vascular turgescence is, however, only one cause of *Cerebral Pressure*, and one which can in general be more easily removed, if treatment be had recourse to in proper time, than any other. Depression of the skull-cap, tumors in the substance of the brain, and effusion upon its surface, or within its ventricles, in common with other causes, very frequently produce symptoms of pressure. This effusion may be of serum, or of red blood. When of serum, it may exist between the membranes, or within the ventricles, or in both situations; and it may arise from many causes, but in every instance it is probable that where actual inflammation did not previously exist, more or less vascular turgescence has preceded it. Very marked vascularity of either the membranes or substance of the brain is seldom found accompanied by great serous effusion. These states very rarely coexist, and this fact alone is strongly corroborative of the doctrine, that they stand in some etiological

relation to each other. Constitutional, or topical debility has, no doubt, been occasionally observed during life, in cases where a large quantity of serous fluid has been discovered in the brain by dissection; and a pure hydrocephalic diathesis may invade the exhalents of the sensorial structure, as well as any other branch of that system; but while every observant pathologist will admit that such cases are not only rare, but frequently complicated by symptoms of equivocal import, debility itself even in such cases cannot be regarded in any other light than as one cause of congestion. After a vessel has lost its natural tone, it can accommodate more fluid while it can propel less, and, therefore, so long as this state continues, and the circulation in other parts of the body maintains its equilibrium, the texture, which this debilitated vessel supplies, must receive more than its proportion of the general mass of blood. The Doctor has already recorded several causes of serous effusion, such as inflammation of the integuments of the head, arachnitis, cerebral sympathy with diseased organs distantly situated, inflammation of the substance of the brain, tumors within the cerebrum and vascular turgescence. In the cases, which follow, other causes of this morbid state are adduced; but they are all obviously connected with a congestive state. In the first case, which shall be extracted, direct mechanical pressure had been applied, and effusion followed the impediment, which was thus thrown in the way of the venous circulation. In five other instances effusion arose from the respiration of carbonaceous vapours. In the 109th history diseased heart was the exciting cause. And, lastly, several interesting cases of the effects of diseased kidneys upon the cerebral circulation are recorded. No doubt other causes of effusion within the head could have been brought forward; such as the action of extreme cold, submersion and excessive haemorrhage; and—

“In some cases (says the Dr.) simple debility is perhaps capable of producing this effect, of which phthisis and diabetes seem occasionally to afford examples; though in both of these, other causes are brought into action, besides debility, in a manner likely to favour the effusion. We have sometimes less questionable examples of this cause of serous effusion, afforded in haemorrhagic diseases and in the exsanguine constitutions of anasarca patients, though in a great majority of these cases decided affections of the kidney, or of some other important organ, as the spleen, serve to throw doubt upon the extent to which debility should be considered the prevailing cause of the effusion.” 265.

(103.) The effects of suspension by the cord are seen in Esther Hibner, whose body was inspected 48 hours after execution. The inside of the skull-cap was mottled with vascularity, the small vessels of the dura mater were turgid with blood, the longitudinal sinus was almost empty, but the other sinuses were full. The arachnoid and pia mater were not remarkable for vascularity, but between these membranes there was a considerable quantity of effused fluid, and the ventricles contained more than their usual proportion. The substance of the brain, when divided, was full of bloody points, the veins of the plexus choroides were distended, but all the arteries were empty.

It is worthy of observation in this case that all the blood, which was contained within the head, was in a state of fluidity, as well in the large as the small vessels. Such is not always the condition of this fluid in cases of hanging, and it might have been satisfactory to have ascertained whether it presented the same appearance in other organs of the body. It is well

known that suspended respiration, more especially if slowly produced and long continued, will so far affect the natural qualities of the blood, as to render the contents both of arteries and veins one homogeneous mass; but it is far from being certain that such a sudden and short suspension of the oxygenating process, as occurs in submersion or hanging, can destroy the coagulability of this fluid—indeed we know by experiment that it generally does not.

The next five cases illustrate the effects of suffocation from the fumes of charcoal. Four of these patients were sailors, and had retired into the forecastle of their vessel to sleep. On the morning following two of them were found lying on the floor, and two in their beds; but all were equally in a state of the most complete insensibility. The upper part of the chimney it was found had been removed, the fumes of the burning coals had been pent up during the night in the forecastle; thus had the air, in which these men lay, been rendered so sulphureous and impure as to be no longer capable of sustaining life, and when they were brought upon deck no other sign of animation, than slow and labored breathing, was discoverable. *Fairfoot* recovered, however, by being merely exposed to pure air and by the use of a little brandy. *Harman* required at first ammonia and general friction with warm vinegar, and afterwards the removal of some blood from the arm; but *Garbett* and *Jackson* died. In addition to the means employed in the cases of *Fairfoot* and *Harman*, oxygen gas was repeatedly inhaled, which never failed to produce some temporary excitement; but respiration became shorter and quicker, and torpor soon returned. In *Garbett's* case the body appeared of a purplish colour; a considerable quantity of blood flowed from the vessels of the dura mater, which were ruptured by the removal of the calvarium; some serum was effused beneath the arachnoid; the sinuses were gorged with fluid blood; the brain was natural; the lower and back part of the lungs as well as the right side of the heart were also much engorged. The membranes of *Jackson's* brain were in precisely the same condition; but the brain itself was more vascular, the cineritious substance was unusually dark, there was a small ecchymosed spot in the outer side of the anterior hemisphere, which was limited to the cortical tissue and was unattended with laceration. The sinuses, vena magna Galeni and veins of the ventricles were filled with dark-colored blood. The mucous lining of the bronchi was beautifully injected, the vasa propria of the heart were in the same state, and the right cavities were gorged.

In the 109th case, diseased heart was the cause of the cerebral oppression. A man, aged 30, had complained, about fourteen months before admission into Guy's Hospital, of a sense of weight at the pit of the stomach, followed by shortness of breathing and palpitation. His lips and cheeks were purple, his legs edematous, the heart beat irregularly and gave to the hand, when placed over the apex, a "sawing feel;" from which the mitral and semilunar valves were supposed to be diseased. At first antimonial ointment was rubbed upon the chest, afterwards a seton was inserted, gentle purgatives and diuretics were administered, and towards the close of life ammonia and other stimulants were required. The right leg was in a state of superficial sphacelus; the right lung was somewhat condensed; the right pleural sac contained some fluid; the left lung also was too solid, and contained little air, except at its edges; the heart was very large; both ventricles were

distended and thickened ; the mitral valves were ossified to a great extent, the semilunar valves of the aorta were thickened to, probably, six times their natural structure, and adhered by the edges to each other ; the tricuspid valves were also a little thickened, the pulmonary artery was large and the aorta small. Several pints of fluid occupied the peritoneal sac. The arachnoid was slightly elevated by some limpid fluid, there was rather too much water in the ventricles, the vessels of the brain wore a dusky purple hue, and the cortical substance a remarkable ash-grey color.

The 110th, 111th, and 112th cases contain nothing of particular interest; but the six succeeding histories well illustrate the connexion existing between diseased kidneys and cerebral effusion.

(113.) A woman, aged 40, labouring under general dropsy, came under the Doctor's care on the 10th of Dec. 1829. The liver was suspected to have been in a state of disease, but from the quantity of water accumulated in the abdomen, the most minute examination of the right hypochondre was unsatisfactory. More than six months previously she had been cured in the London Hospital, by means of mercury, of a somewhat similar attack ; in August she was confined, and in about a month after her confinement the disease re-appeared. She was much swollen, the countenance was rather livid, and she was unable to lie down in bed. Her urine was very scanty, of a dark colour and coagulable by heat. Her stools were of a pitchy blackness, evidently from their admixture with blood. A pill, composed of squills and mercury, with nitrous æther, camphorated mixture and liq. acet. am. were at first tried ; but on the 26th elaterium was substituted, in doses of a quarter of a grain at bedtime, with five grains of Dover's powder. On the 2d of January she was much better ; on the 5th the pills did not act so well ; on the 12th the flow of urine again increased ; on the 24th a sedative enema and fomentations to the abdomen were found necessary to quiet the action of the bowels and to prevent griping ; on the 25th the intestinal irritation was relieved ; but on the 26th it returned and the stools were not only watery and purged, but mixed with blood ; and on the 6th of February she sunk, without any obvious change of symptoms, with the exception of considerable drowsiness. There was some fluid in the chest. The right lung presented a few adhesions, the bronchial tubes were darkened and filled with mucus, but the pulmonary tissue was healthy. The superior lobe was quite consolidated and filled with suppurating points like tubercles, some of which were empty. The pericardium contained three or four ounces of fluid. The liver was hard and yellow. The mucous coat of the stomach was red, softened and easily separated. From the valve of the cæcum to the anus the lining of the intestines was covered with unhealthy, sloughing ulcers. The fatty tunics of the kidneys adhered firmly, the kidneys were lobulated, hard internally, and their external surface, which was rough, was thickly sprinkled with white, flaky deposits. "The arachnoid afforded a very good specimen of the pure serous effusion."

(114.) A woman, aged 30, who had been afflicted for four or five years with dyspœa and occasional spitting of blood, was seized with dropsical symptoms four months before her admission into Guy's Hospital. Her face was full, lips somewhat livid, right orbit puffy, pulse 120, feeble. She lay

on the right side, and when she turned to the left, the dyspnœa increased, the countenance grew purple, the veins of the neck were distended, and the right carotid pulsated violently. The impulse of the heart did not seem to be unusual in strength; but its beat was attended by a "rasping sound," which was audible on both sides of the thorax. On the whole the chest was less resonant than it ought to have been. The bowels were open; the urine was scanty and coagulable. No medicines seemed to afford her any relief. Six days after she was admitted her nausea and sickness were distressing, her urinary secretion was nearly suspended, drowsiness supervened, the muscles were constantly convulsed on the eighth, and on the morning of the ninth she expired. Considerable œdema of the lower, but little of the upper extremities. The veins of the dura mater were enlarged, those at the base were also turgid, and a complete layer of transparent fluid was covered by the arachnoid. The substance of the brain was unaffected by disease. There were strong adhesions between the pleurae of the (right?) side, and the (right?) lung had rather a solid, or tough feel. The heart and pericardium were connected by close and general adhesions, and the former was much enlarged. The right auricle was dilated, the musculi pectinati were much developed, and contained between them small fibrinous coagula. The tricuspid valve was much thickened and contracted, so that the orifice would not admit more than the points of two fingers. The right was as large as the left ventricle, and its walls were greatly thickened. The mitral valves were also thickened and contracted, and the semilunar valves of the aorta were studded with several vegetations of such recent growth as to be easily detached. One of the vertebral arteries arose from the aorta. The omentum formed a band across the abdomen, by having been drawn together by a very slight adventitious membrane, which might be traced over the whole intestines and mesentery, rendering them opaque. The liver adhered to the bosom of the diaphragm, was hard and contained much blood. The lining of the stomach was thick and granular; that of the intestines was œdematosus. The kidneys, especially the right, were mottled and granular, and their investing tunic could not be removed without tearing with it some of their substance.

The Doctor is disposed to believe that the first link, in the complicated chain of morbid appearances which this case presented after death, was the connexion between the heart and pericardium—that this unnatural union disturbed the harmony of the heart's action, and tended to disease its valves, and that, with the exception of the very recent vegetations which appeared upon the surface of these valves, the cerebral affection was the last developed, and arose from the congestion occasioned by the disease in the kidneys. What precise relationship exists in such cases between diseased kidneys and affections of the heart it is not easy to describe. These organs are not seldom simultaneously affected, but the Doctor inclines to the belief that a mottled condition of the kidneys has no etiological connexion with disease in the central organ of the circulation.

(115.) A man, who had for no less a period than 27 years been expectorating purulent matter, which was supposed to come through the diaphragm from an abscess in the liver, became at length anasarcaous, grew drowsy and desponding. Twelve hours before his death he was seized with apoplexy,

blood was taken from his arm, and he seemed for a time to recover; but his stupor returned, and he died completely apoplectic. Some œdema of the face and legs. The lungs were perfectly healthy, with the exception of one small portion of the right lung, which was hepatized. No trace of abscess, nor adhesions to the diaphragm could be discovered. The coronary arteries and patches of the aorta were cartilaginous. The liver was granulated and broken down easily, but presented no scar of former disease. The gall-bladder was full of calculi; the spleen had many cartilaginous deposits upon its surface. Both kidneys were granulated and firmly adherent to their tunica adiposa. About eight ounces of urine in bladder, of a deep color, and throwing down a darkish deposit when exposed to heat. A large layer of serum was contained beneath the arachnoid, which in some spots was opaque. The plexus choroides were diseased, but the cerebral substance was quite healthy.

It had been believed that the matter, expectorated in this case, belonged to an abscess in the liver, which had burst through the diaphragm into the right lung; but neither lung nor liver betrayed any such disease upon examination. The purulent matter, therefore, which was so long expectorated, must have been secreted by the bronchial tubes, and it is to be regretted that the condition of these organs is not alluded to in the post-mortem detail. The chronic anasarca of this man evidently depended on the diseased condition of his kidneys; but it is less certain how far the tumors in the choroid plexus co-operated with this morbid state, in giving rise to the apoplectic attack. Such tubercular bodies have been frequently observed in cases, in which derangements of the circulation have occasioned apoplexy, but whether they should be regarded in the light of effect or cause the Doctor does not decide.

" Of the connection, however, (he observes,) of this morbid alteration of structure, with serious derangement of the cerebral circulation, either as cause or effect, I am strongly convinced from the cases I have seen. In page 97 of the former volume of this work will be found the case of William Wright, who died in a state of complete coma, into which he had been falling for many days; and the only morbid appearance discernible in the brain was a disease of this nature in the choroid plexus. In the Museum of Guy's Hospital, No. 1587, is a tumor of this character, taken from the head of a man who died from sanguineous effusion between the arachnoid of the dura mater and that of the brain. And during the last winter, in a case which came under judicial consideration, and where an individual was nearly suffering punishment for murder, it was ascertained by dissection that death had been caused by apoplexy, with very slight effusion; and tumors of this kind, of the size of marbles, were detected in the choroid plexus; and it is somewhat remarkable that in the case I have just mentioned as preserved at Guy's,—a person was actually tried on suspicion of murder, but it was satisfactorily proved that the death was from natural causes. In the Museum of the late Mr. Heaviside was a well-marked preparation of this disease, in the choroid plexus of both ventricles, where death is said to have been caused by a blow on the head. I know nothing of the history of this particular case, but I am sufficiently convinced of the connection of this disease with fatal cerebral changes to inculcate caution in deciding on the cause of death where these tumors are found to exist." 242.

(116.) A stout, short-necked man, who was suffering from necrosis and had been in the habit of using laudanum to relieve his sufferings, was found

one morning in an apoplectic state from which he never recovered. On inspection the arachnoid was found somewhat opake, and enclosing a considerable layer of serum. The substance of the brain was not remarkable for vascularity, the vessels on the lining membrane of the ventricles were turgid, and these cavities contained a decided excess of fluid.* The lungs adhered to the ribs, but in other respects were healthy. The stomach was tympanitic. The lining of the stomach and duodenum was pale and soft. The liver was rather large and full of blood. The kidneys were pale, granulated and almost tubercular on their surface. The urine was very coagulable.

The immediate cause of a death so sudden as that, which occurred in this instance, is not very perspicuously revealed by the autopsy. There was no sanguineous effusion, no extraordinary vascular turgescence, nor a very unusual quantity of serum either beneath the membranes, or within the brain. The man had been addicted to an habitual use of laudanum; it was during night that his apoplexy came on; a bottle, in which that drug had been contained, was found above his bed on the morning of his decease; and the torpor, into which he at first fell, never intermitted for a moment until the close of life. These circumstances are, at least, suspicious that his death may have been promoted by an over-dose of opium. The state of the kidneys, no doubt, contributed to produce the slight serous effusion which existed within the head; and, as the Dr. very justly remarks—it is difficult to consider the state of the choroid plexus as wholly unconnected with the fatal event.

The pathology of the next history is more fully developed.

(117.) A man, who had symptoms of stricture and diseased prostate, and who laboured under great difficulty in passing water three days before his death, became exceedingly drowsy; sleeping day and night, and often so soundly as not to be roused. On the evening before he died he was so overcome by sleep, as to go to bed without undressing. The lungs were rather emphysematous, adhered towards the apex, and contained several hard lumps of carbonaceous and tubercular matter. The mitral valve was ossified, the tricuspid valves were much thickened, and the left auricle was as much distended as the left ventricle was contracted. The pancreatic duct was filled with a grey mucous substance like starch, and its lining membrane was obviously thickened. The spleen was small and covered with small cartilaginous deposits. The kidneys yellow, granulated and very firmly adherent to the adipose tunics, which from their hard surface seemed to have been subject to frequent inflammation. Pelves of kidneys and ureters dilated, bladder thickened, urine very coagulable, prostate enlarged. The dura mater appeared thick and opake, and a layer of fluid "not less than a quarter of an inch deep" was deposited beneath the arachnoid.

In the 120th case unhealthy liver, extensive ulceration of the intestinal

* The large vein of the plexus choroides was full of blood, the plexus itself was of a light drab color and a granulated appearance, and on the right side this became even more marked, as it was followed into the posterior cornu to which it firmly adhered. One part of the left plexus was converted into a mere fleshy lump.

lining, numerous vomicæ in the left lung, and opacity of the arachnoid, with considerable serous effusion beneath it, proved the existence of very serious disease throughout the three great cavities; but although the hepatic affection was the most prominent during life, and the thoracic symptoms must have materially reduced the powers of the system, it is probable that the cerebral derangement was the more immediate cause of dissolution. The irregular habits of the patient had, unquestionably, been long laying the groundwork of disease both in the brain and liver. That milkiness of the arachnoid, which was here observed, is often the consequence of acute inflammation, but more frequently of a slow and tedious process of excitement; and in no instance within our recollection have we found it wholly absent, where a systematic and prolonged habit of intemperance had been indulged in. The next case is very interesting on more than one account.

(121.) A carpenter, aged 45, before his admission into Guy's Hospital, had been ill for two years with anasarca of the lower extremities, for which cupping over the region of the liver, infusion of juniper, supertartrate of potash, and other remedies were employed. About a month after he came under the Doctor's care, he was seized with hemiplegy of the left side, under which he more or less suffered until his death. On removing the skull-cap and dura mater, the brain appeared very exsanguine, and on the left hemisphere, close to the temple, one of the convolutions was excavated to the "extent and depth of half a hazel-nut." This cavity looked clean, and had no resemblance to a recent ulcer. Although a considerable quantity escaped during the dissection, seven ounces and a half of perfectly limpid fluid were taken out of the lateral ventricles. The right ventricle was decidedly the most distended. The heart was much enlarged, and universally adherent to the pericardium. The liver was indurated, mottled and covered with an adventitious membrane, by which the gall-bladder was bound down.

"In this case (says the author) it is not improbable that the condition of the heart laid the first foundation for disease; and when the exposures incident to the life of a labouring man induced irregularity in the circulation, through the other important viscera, the general anasarca and the effusion into the ventricles followed as consequences. There is much reason to suppose that the hemiplegia depended upon the pressure of fluid in the ventricles, and that this was chiefly poured out in the months of July and August, about five months before death: the fact that the left side suffered most, while the right ventricle had been most distended, favours the conjecture; and on the other hand, the excavation in the surface being on the side which suffered most from paralysis, leads us to suppose that it had less influence in producing those symptoms; at the same time it is not quite evident to what cause we are to ascribe excavations of this kind; not improbably they are the results of laceration and injury of the brain, followed by absorption of the injured part." 252.

The seat of disease in *Diabetes* having usually, as it were by some prescriptive rule which has been more easily followed than explained, been referred to the abdomen, few have troubled themselves with examining in such cases the condition of the cerebral organs. Yet it must be admitted that our post-mortem examinations have hitherto found but little abdominal disease to account for an affection so peculiar. It was at first declared by Mead that the liver was seldom, if ever healthy, and Home and Rollo have pointed to the kidney as the certain source of evil; but it is not to be denied

that both of these viscera frequently exhibit the most unequivocal marks of health, in cases where this disease has destroyed life. Dr. Bright has generally found the liver remarkably healthy; and, with the exception of their being either vascular or flabby, the kidneys have appeared to him seldom diseased. Often, but not always he has found the lining of the stomach and bowels either inflamed, contracted or ulcerated; and in all the cases, in which the head has been examined, "decided morbid appearances have been found." Serous effusion, great vascular turgescence, an apparent reduction in the natural size of the brain, and a state of structural consistence less firm than ordinary, and yet insufficient to entitle it to the character of "softening"—have been the results of his dissections. These, however, have been too few to warrant any inference stronger than a suspicion that the deranged function of the kidneys in diabetes may have more immediate alliance to some unhealthy cerebral state than has generally been imagined. We know that mental excitement or depression operates remarkably on the urinary secretion; that injuries of the spinal cord often wholly change its character; and that the irritation, produced by an hysterical paroxysm, acts as a powerful diuretic. These are facts well established, which it may be wise to keep in view while this point is under investigation; and this chain of relationship between the brain and kidneys is composed of a double series of links, for when the secretion of the kidneys is seriously deranged we have already seen how strongly the functions of the sensorium sympathize. In *ischuria renalis*, when urine ceases to be elaborated, the patient sinks under apoplectic symptoms. With his characteristic caution the Doctor refrains from going farther, than to suggest the connexion to which we have now alluded, but gives the three succeeding cases as part of the evidence, upon which the probability of such connexion rests.

(122.) A young man, aged 19, afflicted with diabetes, was placed under the author's care on the 25th of October, 1828. All his symptoms were well marked and severe. The quantity of urine passed during 24 hours was 14 pints, each pint yielding nearly two ounces of extractive matter, which was sweet and granulated like honey when kept for some time. The *uva ursi*, *conium*, alum-whey, carbonate of magnesia, sulphate of zinc, fomentations to the bowels, and the warm bath were all tried; vegetable food was abstained from, and he was twice bled from the arm. Of these the magnesia was the only medicine which produced any obviously good effect. Opium, at first in one and afterwards two grain doses thrice daily, was employed with decided benefit. The urine diminished to half its quantity, and the extractive matter was less saccharine. Towards the end of January inflammation of the right lung supervened, which required a blister, repeated bleeding both by the lancet and cupping, and the free use of calomel, opium and tartar-emetic in the form of pill. By the 4th of July he was in all respects better and his pectoral affection had nearly subsided; but on the 10th of the same month the left lung became similarly affected with the right, and the same remedies were employed; but during the night of the 13th he died quite exhausted. The body was much emaciated, the integuments were almost like thick paper. The heart was small. The mucous membrane of the cæcum and colon was eroded in some parts, and in others in a state of slough. The kidneys were rather large, firm and of a deep chocolate color.

The arachnoid contained a large quantity of serum, the vessels were distended in a remarkable degree. The ventricles were also distended; the brain was flaccid, and the cerebellum was so very much so as to amount almost to a state of softening. The left lung adhered to its lower and posterior part and a most marked and curious appearance presented itself.

"A portion of the pleura costalis of nearly an oval form near the angles of the ribs was inflamed, in length about six inches, and three inches broad at its widest part. On this, when the lung was gently torn away, was left a thick layer of coagulable matter, at the lower part opake and yellow, but the greater part looking like a yellow gelatinous semitransparent deposit; this was composed of fine filaments of fibrinous matter, containing a yellow fluid in its meshes. The membrane on which this lay, for the extent of an inch all round, was almost purple with vascularity, which, on close examination, assumed the most beautiful dendritic forms. When this portion of pleura was stript from the ribs, the lower side was covered with bloody points, on which stood drops of blood, showing how completely in a thin subject such as this the vessels of the pleura are under the command of local bleeding by cupping or leeches. The corresponding portions of the pleura pulmonalis were nearly in the same condition.

Besides this state of the pleura, the lower lobe of the lung itself had been inflamed almost through its whole extent, and was in a state approaching to hepatization, but combined with some œdema, and on the lower part of the lobe was a circular patch of gangrene of the size of a crown-piece, which showed the limits of a gangrenous mass beneath, proceeding towards the part lodged on the diaphragm, where two circular patches of the same character were seen. This lower surface of the lung adhered to the diaphragm by thick layers of lymph, as the other part of the lung did to the pleura; and the diaphragm all around was inflamed, so that the deep purple inflammation pervaded to the lower surface of that muscle; and even the spleen, which here came in contact with the diaphragm, was rendered of a dark colour at the point of contact. The gangrene of the lung at the part was complete, forming a green mass, more like mud than pus, and smelling most offensively: it had not apparently discharged itself at all, but was pretty well separated by a thin membranous division from the neighbouring part of the lung. In the same globe, higher up and at the distance of two inches, was a circumscribed cavity of the size of a hazel nut, full of the most perfect yellow pus. The upper lobe was nearly natural, a little emphysematous, and containing some serum. No tubercular deposit had taken place.

On the right side of the chest precisely the same process had been going forward, but the disease of the pleura was not quite so extensive, whereas the disease of the lung was still more so, and both the one and the other were in the more advanced stage. The adhesion to the pleura was much more firm, so that the gangrenous portion of the lung could not be separated without lacerating the pleura of the lung, and thus opening into the cavity, which appeared to be making its way through the skin between the ribs, though it probably would never have done this, as it was found to communicate very freely with some large branches of the bronchi by which it had evacuated much of its contents. In the centre of this large gangrenous cavity was a slough, still connected loosely to the sides, and hanging from a kind of stalk, where the lower surface of the lung lay upon the diaphragm. On this side the adhesion was more firm than on the other, and numerous straight vessels were seen running from the one surface to the other in the fine filaments of the newly formed membrane. The middle lobe was hepatized in some parts; the deposit in its structure assumed somewhat the aspect of tubercular matter deposited in lumps, but no complete tubercles were found. The upper lobe was like the upper lobe on the other side." 258.

(123.) A man, aged 26, was seized with symptoms of diabetes mellitus

in a severe form. He was much emaciated, his skin was dry, eyes glassy, gums tender, bowels costive, appetite voracious, thirst constant and urine passed in the quantity of six pints during the 24 hours. Various remedies and systems of cure were tried, amongst which animal diet and hydrosulphuret of ammonia were the most rigidly persisted in. Free purging at one time appeared to do good, and the urine diminished under the use of opium, of which he took from one to three grains three times a day for some weeks. Towards the close of the disease one of the most prominent symptoms was a growing imbecility of mind, attended by a dimness of sight. On inspection both lungs were found to contain in their upper lobes large cavities, lined with cartilaginous membranes, and filled with pus, besides many tubercles. The heart was small and the cellular membrane investing it, more particularly at its apex, was dropsical. Liver extremely healthy, and kidneys perfectly so both in color and consistence. The stomach and intestines bore no traces of disease. Between the arachnoid and brain a considerable quantity of serum was deposited. The ventricles contained at least six ounces of limpid serum. The septum lucidum was so attenuated as to allow the fluid to pass freely from one ventricle to the other. The smaller ventricles were also filled with serum. The substance of both brain and cerebellum was soft and watery.

(124.) "The following case of diabetes presents, in the morbid appearance of the brain a striking similarity to the other two I have detailed. I saw but little of this patient during life though I observed his emaciated appearance and examined his diseased urine occasionally, as I passed through the ward." The body was much emaciated. The liver was very healthy. Kidneys firmer than usual, if in any respect differing from their ordinary character. Other abdominal and all the thoracic viscera healthy. The arachnoid was quite distended with fluid; the veins were turgid, cerebral substance flabby, but not softened and very much gorged with blood; the ventricles contained more than their usual quantity of fluid, and some lay at the base of the skull.

There are few diseases more boldly featured than *Apoplexy*; few whose symptoms are generally esteemed less equivocal, yet in many of the cases which follow the truth of the observations, with which this article opened respecting the equivocality of symptoms, is abundantly confirmed. According to the Doctor's experience the people attacked are neither uniformly tall nor short, spare nor corpulent, young, old, nor middle-aged. In some there was no premonition, in others it was most marked; in some the attack occurred without pain, in others it was severe; sometimes consciousness was merely impaired, at others it was wholly lost; in some cases palsy followed, in other instances no vestige of disease remained; at one time the nerves of sensation were alone affected, at another those of motion, and in a third palsy had seized equally alike on both; in some convulsions are frequent, general and severe, while in others they are wholly absent; sometimes hemiplegia, at others paraplegia supervenes; in some cases great pain is experienced in the palsied part, in others none; in some the mind is weakened, if not irreparably shattered, while in others the mental injury is so slight that it is only by close examination it can be detected. What relation such varieties and changefulness of symptom have with the situation or extent of

the effused fluid is a question of very considerable interest, but difficult of solution. The almost universally admitted fact, that palsy occurs on the side opposite to the seat of pressure is, as we shall see, questioned by the 145th case, in which the left side was the subject of both the hemiplegic and cerebral disorder. The Doctor has found that great pain was often complained of when the fluid effused was situated upon the surface of the brain—that the most rapidly fatal cases were those in which the fluid had been effused into the ventricles—that there was often some connexion between some injury of the cineritious substance, or ventricular effusion, and convulsions—that the corpus striatum has been found injured when deglutition and speech were seriously impaired—that, in accordance with Serres and Foville's opinion, injuries of the corpus striatum and anterior part of the brain are followed by palsy of the lower extremities, while those of the optic thalamus or posterior parts are succeeded by palsy of the upper extremity of the opposite side—that when blood is effused externally to the brain it may be found either between the dura mater and arachnoid, beneath the arachnoid alone, or in both situations at the same time—that the choroid plexus may be ruptured, and thus give rise to apoplexy; and, finally, that the most frequent site of effusion is a little to the outside of the corpus striatum in either hemisphere, where the arterial trunks give off large vessels in the fossa sylvii. These are the leading general results to which the Doctor has been brought by his experience in apoplexy, and many of them are as curious as some are important. But he modestly observes that "the deductions, which I have been able to derive from my own observation, are few and not sufficiently confirmed, to be advanced in any other way than as hints for inquiry, or as confirmations of the observations of others, when they agree." 329.

The Doctor has brought forward no fewer than 42 cases of well-marked apoplexy, and as no two of them are in all respects alike, the reader will find in their attentive perusal as much experimental knowledge, as falls to the lot of even our most fortunately circumstanced practitioners. It would be inconsistent with our limits, however, to lay before him more than a few of the most interesting—the rest ought to be consulted in the pages of the original.

(125.) A young man was suddenly seized with insensibility and stertorous breathing, for which Mr. Streeter's assistance was required. As the pulse felt jerking and the temperature of the skin was considerable, a vein was opened, but scarcely had two ounces issued from a small orifice when he became cold and the pulse sunk. Cloths dipped in hot water were applied to the epigastre, and stimulants were given internally; but as the head felt hot and the carotids throbbed violently, cold cloths were preferred for the temples and forehead. An attempt was made to draw blood from the nape by cupping, but the pulse fell so much after the abstraction of an ounce, that it was not considered prudent to persevere. Purgative medicine was given with some relief, he regained his speech, and in part his sensibility, but the fit repeatedly returned, and in little more than a week he died. About eight ounces of blood were effused over the left hemisphere of the brain, which had proceeded from the bursting of a small aneurismal sac situated at the union of the anterior and middle lobes. This sac contained a clot, which

had nearly closed up the aperture, and although its connexions were destroyed before its nature was discovered, it appeared to have belonged to one of the branches of the middle cerebral artery. There was rather too much water in the ventricles.

(288.) A married man, aged 45, who had experienced several slight attacks of palsy, complained of headache, staggered and would have fallen had he not been caught. He attempted to speak, was somewhat convulsed, soon became senseless and never after spoke, or swallowed. His left pupil was dilated, his right contracted, he breathed stertorously and lay in a state like tranquil sleep. He was freely bled and had some croton oil smeared upon his tongue; but he expired thirteen hours after the first attack. The vessels of the dura mater were turgid, especially on the right side, the convolutions in both hemispheres were flattened, a layer of coagulated blood was distributed in the cells of the pia mater pretty generally over the left hemisphere; the cerebral substance was healthy; the two lateral ventricles were distended with "fluid serous blood;" the inferior connexion of the septum lucidum was soft, ecchymosed and torn. The substance of the left corpus striatum and of all the three lobes of that hemisphere was occupied by one extensive cavity containing blood. The coats of the right cerebral artery seemed healthy, but the cylinder was filled with a firm pink-colored cord of fibrin, which ramified into one or two of its branches. On blowing into the left trunk, as it entered the fissure of Sylvius, very minute ramifications were inflated; but it could not be ascertained whether the aneurismal sac were filled. A secondary arterial ramification showed a small aneurismal dilatation, filled with dark solid blood.

(126.) A lady suffered an attack of apoplexy, accompanied with severe pain in the top of the head, which descended down the back and spine, and which was relieved by bleeding. Nine months afterwards she was again attacked and bled to a few ounces, but died after having experienced a third fit. Dissection could discover no vestige of the former attack; but the surface of the brain, particularly on the left side, was covered with blood, and there was some in the third ventricle. The choroid plexus was pale, and it was believed that the rupture had taken place at the union of the vena magna Galeni with the lateral sinus. In the next two cases apoplexy was induced by a fall, and blood was effused upon the surface of the brain. The 129th case is somewhat peculiar for the remarkable character of the circulation, the pulse having ranged between 22 and 30 beats in the minute; and for the excessive hypertrophy of the heart, having been at least twice the natural size.

(130.) An elderly gentleman, of temperate habits but of an anxious mind, retired to rest much fatigued after the labors of the day, after having moderately supped. About half-past one he awoke with feelings of nausea, and, after vomiting he was relieved. His wife became alarmed by some noise which proceeded from his throat, and when assistance came he was found in an apoplectic state, which destroyed him in twenty minutes. The membranes of the head were turgid with dark-colored blood; the substance of the hemispheres appeared generally healthy; the lateral ventricles were

distended with semi-fluid blood, which had torn through the commissurae mollis, and entered through the third into the fourth ventricle. The surface of the corpora striata was broken down to about the depth of the fifth of an inch, and the velum interpositum was rent. The source of the blood was not discovered; but was suspected to originate in the lacerated portion of the septum.

How far the vomiting in this instance contributed to the haemorrhage may be a question, and it may indeed be doubted whether in any degree it conducted to that effect. As the Doctor justly observes, there is good reason for believing that the nausea arose from the cerebral disturbance, which preceded the attack; but there is less for ascribing the attack itself to the vomiting which followed it.

(135.) A stout built sailor, aged 61, fell from some part of the rigging of his vessel and was somewhat injured. He was bled to a pint, after which he was brought to the hospital, complaining of headache and palsied on the left side. A pint and a half more blood was drawn and a purging pill was given with considerable relief to the pain in his head, and shortly after 12 ounces were removed from the nape by cupping, cold applied and a purging enema ordered. Two days afterwards he had a severe fit resembling epilepsy, which continued two hours, and left him nearly senseless, and during the next day he died. Heart large; arch of aorta thickened, uneven in its entire course and, before dividing into the iliacs, its inner surface was broken and in one point ulcerated. The carotid, vertebral and basilar arteries also diseased. The convolutions of the brain were considerably flattened, and on cutting through them a softened portion was discovered in the centre of the middle lobe of the cerebrum on the right side, forming the top of an apoplectic clot, which was situated in the middle lobe of the right side, and contained about an ounce of blood. The right ventricle was not penetrated; but its lining membrane was the only partition between it and this effused fluid. The kidneys were granulated. The urine albuminous.

(143.) A man, aged 47, who had been Clown to one of the Minor Theatres, and was said to have been subject to some head-affection for two years, was admitted into hospital in a state of great depression, with fluttering pulse and cold extremities. A little wine and some subcarbonate of ammonia were given to bring him out of this state of collapse, and next day he was delirious, restless and talked unintelligibly. His head was shaved and covered with cold, a blister was placed between the shoulders, and a pill, composed of one grain of calomel and four of hyoscyamus-extract, was given every six hours. The next night was passed more tranquilly, but his speech became inarticulate. Three days after pectoral symptoms appeared, yet his pulse was 80 and weak; during the next two days he grew worse, and on the ninth day after his admission he died in a state of great feverishness, with a hot skin, purple cheeks, dry tongue, and a pulse at 120. Portions of the arachnoid were opaque and some fluid lay beneath it; the carotids, basilar, and arteries passing over the corpus callosum were much ossified. The cortical brain was soft, and when pinched between the fingers "a thin layer, about one third or one half of the thickness of the whole separated quite smoothly from the rest, and allowed of being peeled off in

flakes as large as a shilling." The medullary texture was firmer than usual; the ventricles were distended, and their lining was thickened, scabrous, and in some points adherent to its opposite surfaces. On the right side there were vestiges of two or three apoplectic cells; one small cavity was seen in the back part of the centrum ovale, a similar appearance was discoverable in the centre of the left cerebellum, and a large cyst occupied the centre of the corpus striatum in the right side. Each of these cysts was bounded by firm walls, and filled with a yellow transparent fluid. A quantity of turbid serum, mixed with flakes of coagulable lymph, occupied the right chest, and the right lung was condensed; the pericardium contained some gelatinous fluid; the surface of the heart was covered with coagulable lymph, and there was great hypertrophy of the left ventricle. The liver was slightly, the kidneys much granulated; the inner coat of the stomach was rough and hard, and the urine coagulable by heat.

In this case the brain was very extensively and variously diseased; but its pathological products appear of more ancient date than that of the last illness. The apoplectic cells bespeak the past occurrence of various cerebral attacks; the thickening of the ventricular lining and its adhesions to different points of its own surface shew the prior existence of inflammatory disease; and the disorganized condition of the vessels of the brain, viewed in connexion with the hypertrophy of the heart, may in part explain the frequent derangements which took place in the cerebral circulation.

"The very peculiar condition of the cineritious substance must not be lost sight of, difficult as it is to explain the morbid action of which it was the result. It is a matter of frequent observation, that the cineritious substance is divided into layers, as far as colour is concerned; and in cases of close adhesion of the pia mater from inflammation, I have found a complete lamina of the brain tear off, leaving a well-defined surface below. But in this case, without evidence of inflammation, this separation was more remarkable, though there was no adhesion whatsoever of the pia mater; and I shall shortly have occasion to relate a case where the same morbid appearance was strongly marked, and where, as in this case, the vessels were ossified, and the cerebral substance was very firm; where also vertigo, slight paralysis and occasional incoherence of mind were the leading symptoms during life." 304.

(145.) A middle-aged man was admitted into hospital with severe symptoms of bronchitis and œdema of the lower extremities. His left arm and hand were considerably palsied, and he hesitated in speaking. These were the remaining effects of a complete attack of hemiplegia of the left side, which he had suffered about a year previously. After having spoken to the nurse a few minutes before, he suddenly expired on the third day after he had been admitted. The arachnoid and pia were vascular, firmly adhered to the lateral and outer part of the left hemisphere by a thin yellow flake of fibrinous deposit, and contained beneath them a small quantity of serum. Immediately below this adhesion, and extending to the middle of the corpus callosum, was an opaque hard portion of brain, which contained a cavity filled with soft curd-like substance, and was as large as the half of a small French bean. The rest of the cerebral mass was quite healthy. The lungs were emphysematous, the larger bronchi were filled with pus, and the mucous lining was very red and inflamed. The right cavities of the heart were enormously gorged with blood. The interesting peculiarity of this case

consists in its furnishing the pathologist with an exception to the general, we had almost said universal and indisputable rule, of having the palsied member and injured portion of brain on opposite sides of the body. The medulla oblongata was unfortunately so injured, that it could not be ascertained whether any peculiarity existed in the course and decussation of its fibres. Supported as we are by several unimpeachable authorities, it cannot be denied that cases, similar to the present, have before occurred; but they are not only so few in themselves, but their very existence so much depends upon the accuracy and honesty of the friends of the deceased, as well as upon the testimony of the medical witnesses, that they can never be regarded as affecting the general rule, in any other way than by establishing its general application. *Exceptio probat regulam* is an old maxim, which may be applied to medicine with as much truth as to philology, astronomy or mathematics.

We find that space will not permit us to extract more than two other cases, each of which is highly interesting.

In the first (146), a middle-aged man, of irregular habits, suddenly lost the use of his thumb and the next two fingers of his left hand, without experiencing any giddiness, or headach. Continuing at his work the whole arm became palsied in four days, and shortly after his left leg grew weak and his tongue faltered. When he came under the Doctor's care the palsy of the left arm and leg was complete, his mouth was drawn to the right side, he had some pain of occiput, his bowels were confined, and his pulse was 84, of good strength. Ten ounces of blood were drawn, and a purgative was ordered. He found his pain worse from the bleeding, and his left hand became affected with severe spasmodyc shaking. Twelve ounces were taken from his nape by cupping, and the purgative was repeated. During the next three days he felt somewhat better, but on the 9th the headach so increased as to require the cupping-glasses a second time; on the 16th 20 leeches, were placed on the temples; on the 18th 20 more; and on the 20th the C. C. withdrew ten ounces of blood from the nape. The relief afforded by each leeching was great, and the sensation of the arm had almost returned; but on the 21st, although the headach remained much relieved, he was very low, inclined to doze, articulated less distinctly, and was decidedly less alert and less sensible than before. On the following day he expired. The examination circumstances prevented for two days, and then the head only was inspected. The vessels of the dura mater were turgid, the convolutions of the right hemisphere were flattened, and when the scalpel was carried into its substance, to the depth of about a quarter of an inch, a cavity was discovered containing above an ounce of serous fluid, at the bottom of which lay a clot of coagulated blood. This cavity was lined by a very vascular membrane, in thickness about one-twelfth of an inch, soft but tough, and so firm as to bear grasping with the forceps. Its vessels were both numerous, large and convoluted, and lay occasionally so superficially as to permit a bristle to pass under them, while passing from one irregularity on the surface to another. There were four projecting nipple-like points in the cyst, which were so deeply colored as to appear stained by extravasated blood.

Besides this cyst there was a smaller one above, behind, and on the inside of it, which contained about half a dram of fluid without a clot, and

was lined with parietes, collapsed, corrugated, and of nearly double the thickness of the larger cyst. The ventricles were in no respect implicated, and the rest of the brain was healthy. The Doctor believes that if this case be viewed as one of apoplexy from ruptured vessels, blood was effused at three or four distinct periods; and, although he is not quite satisfied as to the degree of benefit produced by depletion, he is inclined to consider it upon the whole to have been useful. A more questionable point seems to be, how far these cysts were connected with previous fits of apoplexy. It will be perceived that the parietes of these cysts were equally remarkable for their density and their firmness, and it is generally admitted that a very considerable period is required, before Nature can bring her restorative process to a degree of perfection so matured. In some cases the constitution makes no effort to repair the injury, but the brain softens, fresh attacks of hemorrhage occur, and the disease ultimately proves fatal. In others the effused blood and injured portion of brain mingle into one soft mass, and remain for many months unabsorbed. In some, as in this instance, a cyst is formed to contain and separate the diseased part from the rest of the cerebral structure, this matter is gradually absorbed, the cyst corrugates and contracts, and nothing can be ultimately found but a yellowish-white solid line of substance resembling a cicatrix. But in such instances as this the restorative process commences and is completed at very different periods. In the 136th case it had evidently commenced on the sixth day, and in the 137th on the tenth. In the 140th considerable reparation had been made in 23 days, in the 139th a distinct cyst had been formed in the course of seven weeks, and in the 145th case the apoplectic cavity had been almost obliterated and a cicatrix had formed, but we unfortunately possess no data from which we may conjecture the length of time occupied to effect this. In the 138th case no appearance toward healing had manifested itself after the lapse of 12 days, and in the 144th instance the disorganized mass shewed no tendency to undergo a favorable change when twelve months had expired. These facts being considered it becomes a question how far we may regard the two cysts in the case last given as vestiges of apoplectic disease—

"As I have never (says the Doctor) met with a similar morbid appearance, I am led to compare with it any approach which I may have witnessed, and with this view would refer to the condition of the parietes surrounding the sanguineous clots in the cases of MARY AGNES and of JOHN PUGH, in both of which we find vessels beginning to ramify upon the broken surface, and other larger vessels dissected out so as to be prominent, and even in parts detached from the brain, like some of the larger vessels in the present case. We can easily suppose that vessels thus freed from their usual restraint, and brought to the surface, would admit of great distention, and might form something very much approaching to the vascular plexus composing these cysts: still, however, if this be the theory of their formation, the time allowed appears inadequate; and if such be the case, and we have to look to some previous attack of which we have no account, we may as easily suppose that the vascular cysts were morbid structures not originating in apoplexy, but filled with pure serum, till, by the bursting of some of the vessels of which they were composed, blood was poured out, which by overfilling the cavity would produce pressure and all the symptoms which we have seen; and this latter view is borne out by the fact that in the smaller cyst no bloody clot was found, while in the larger the appearance of certain parts of the surface rendered it highly probable that blood had lately been given out by the vessels, and at the same time the clot was more like recently coagulated blood

than we should expect to find in a cyst so highly organized. It is, then, upon the whole most probable that this was a case of hemiplegia from the effusion of blood into a vascular cyst already formed, either by a previous effusion of blood or by some other cause: and the pain experienced during the whole disease depended possibly on the membranous nature of the surface on which pressure was made." 312.

(162.) A man, of active habits, a sanguine temperament, and 48 years of age, was attacked with rheumatism by exposure to cold, and labored under it for many years, together with habitual costiveness and derangement of the digestive organs. Fourteen years afterwards he received a slight paralytic stroke, which affected the muscles of his left side. This attack was followed by several minor ones, which were relieved by cupping, blistering, purgatives and a seton in the neck. The hemiplegia was thus gradually converted into paraplegia, and as the disease advanced one function yielded after another, until he eventually sunk. The mind was, however, unaffected until a few hours before death. With the exception of a little fluid between the membranes and slight congestion of the pia mater, the head betrayed no symptoms of disease. A considerable quantity of serum lay between the membranes of the spinal cord, and the arteries of its pia mater were much injected. "Within the upper dorsal vertebrae on the left side, rather more than an inch in length, in the direction of the spinal axis and about half an inch in a transverse direction, was an apoplectic cell, containing the red and broken remains of a coagulum; and lower down in the spinal canal, the internal ligament was to some extent deeply marked by ecchymosis, as if in progress towards the formation of another similar effusion." This effusion was external to the cord, which did not seem either inflamed or disorganized, and the coagulum appeared to be inclosed in an adventitious membrane.

Apoplexy of the spinal cord is rather a rare occurrence, and therefore the foregoing case is the more valuable. It will be observed that the hemiplegia and the hæmorrhagic deposit were both situated on the left side—that the hemiplegic gradually degenerated into a paraplegic affection, and that the intellectual powers survived until the very last. In all these respects this case differs from ordinary apoplexy, and as it had been mistaken by Dr. Stroud, under whose care the patient was, for apoplexy of the right side of the brain, the reader will do well to note these peculiarities. Dr. Stroud theorizes upon the relationship which maintained between the previous rheumatic affection and this disease of the spinal cord; but we can perceive no ground for theory in this matter, much less can we imagine with the Doctor that it had any "*dependence on mental emotions affecting the spinal cord rather than the brain.*" It is somewhat novel to talk of the mind acting more readily upon the spinal marrow than the cerebrum!

It is almost unnecessary to say that the lancet is our *magnum remedium* in the treatment of apoplexy, whatever tissue or constitution it may invade; but, as the author observes, it may be employed either to remove congestion, or to arrest hæmorrhage. When mere vascular plethora is the compressing agent, depletion produces almost instant cure by unloading the brain of its overplus of blood. It has, indeed, been strongly argued by Dr. Kellie of Leith, and it has been fashionable with some subsequent writers to contend that the brain can contain only a certain quantity of blood, through

its being relieved from the pressure of the external atmosphere by the ossaceous case in which it is protected. But these physiologists have never yet succeeded in reconciling the occurrence of apoplexy with this theory. That the brain is elastic and can be compressed it is impossible to deny; that this pressure frequently arises from engorged vessels is equally certain, and that the removal of this engorgement by depletion is followed by the removal of all pressure-symptoms is matter of daily and indisputable experience. These are facts well known and not easily disputed, and it appears to us that they are totally inexplicable on the supposition that the quantity of blood, circulating through the brain, is under all circumstances the same. If atmospheric pressure be withdrawn from the immediate surface of the brain, as is said, and as it no doubt is, this agent is not withdrawn from the remaining surface of the body, and we apprehend that the very circumstance of the brain being encased within an unyielding cover, while the rest of the body remains subject to all kinds and degrees of pressure, will render it physically impossible for the brain to contain at all periods the same amount of circulating fluid. We can easily conceive, because we can daily see, that inordinate exertion, powerful excitement, vascular plethora, hypertrophy of the left ventricle and such other conditions as materially augment the momentum of the circulating mass, may encumber the brain with more than its natural proportion of blood by compressing its elastic tissue, and may even extinguish its functions by carrying this compression to a degree incompatible with their continuance.

When rupture has taken place and blood has been effused, bleeding must of course be a less frequent and less immediate remedy. *Intravasated* fluid has not only to be withdrawn, that the haemorrhage may be arrested, but that which has been *extravasated* requires to be removed by the absorbents; and we have already shown how tedious always and how frequently imperfect this department of the cure is. The author deprecates small bleedings, as more calculated to weaken the general powers than to curb the local disease; while at the same time he cautions the practitioner from too indiscriminate an application of the lancet. Very large bleedings, more particularly in relaxed habits, favor serous effusion; and it is well known that by small repeated bleedings universal dropsy has been induced.

"These considerations will render us more cautious in the abstraction of blood, though we must be always ready to meet by bleeding any such aggravation of symptoms as bespeaks a recurrence of congestion, or a tendency to fresh haemorrhage. When once the circulation has been restored to a more healthy condition, there is no good reason for persisting in depleting measures. We have now to support nature in her operations, and patiently to await the issue: the circulation must be preserved in a quiet and tranquil state, till the injury inflicted on the vessels is healed; and the constitutional energy must be sustained, while a process almost analogous to cicatrization takes place on the surface of the cavity; while the mass of brain mingled with blood is absorbed, and possibly while new cerebral matter is formed by a complicated process of absorption and deposit, which may perhaps distantly resemble the operations which pass beneath our eye when accident or disease has destroyed large portions of bony structure." 336.

When the general system has been previously reduced by venesection, or when the plethora appears so partial as to be limited to the vessels of the

head, cupping on the nape or temples may be advantageously employed, and blisters to the nape, tartar emetic ointment, or a seton are advised under similar circumstances; but he speaks with hesitation of the use of cold, except in cases attended by febrile symptoms, or by general activity of the vessels in the brain. Its continued employment, where this action is feeble and there is considerable congestion, tends in his opinion to increase rather than diminish the danger; but he admits that when it is suddenly applied, it may remove congestion if cautiously administered, or even check effusion in cases of rupture. "Employed with this view however, he adds, it would be hazardous, as by driving the blood from the external we might very probably throw it with greater impulse upon the internal circulation of the head." Purgatives are always useful and often indispensable, as a deranged condition of the stomach and bowels is not unfrequently the cause, and still more frequently a consequence of apoplexy. The most active medicines of this class are often required to stimulate these organs to a sufficient degree; but we are cautioned from using calomel where deglutition is very imperfect, lest, as happened to the Doctor, it be retained on the tongue, and induce a state of ptyalism by no means free from danger.

"I once saw most serious consequences result from this, for having put five grains of calomel on the tongue and attempted to wash it down with a cathartic draught, the calomel, instead of passing into the stomach, remained, moved about by the tongue, and produced in a few hours a most alarming ptyalism, in which the tongue was forced out of the mouth, and it was necessary to scarify it deeply before it could be returned within the teeth. If however the patient can swallow well, a dose of calomel with extract of colocynth followed by castor oil is a very proper purgative. Cathartic injections may also be used with much advantage. In some cases, where the paralysis has been less complete, where paraplegia has occurred, or where there has been a combination of hysterical irritation with the paralytic affection, purging has sometimes been the chief means of cure." 337.

After the strength and severity of the attack have passed and our attention requires to be directed to the nervous relaxation, torpor and palsy which too often succeed to it, the balsamic preparations and the mineral tonics will be found of great benefit. The sulph. zinci and solut. arsenical. are especially recommended; nux vomica has been much lauded, but of late its active principle, strychnia, has been usually substituted.

"In a case of local paralysis, I have applied this powerful remedy in doses of the eighth, the quarter, or half a grain, to a blistered surface, with the effect of producing spasmodic action through the paralysed muscle, and I have sometimes administered it internally with advantage. But cases of hemiplegia from the rupture of vessels are not those in which this remedy holds out the greatest prospect of success, though with caution it may be employed in the advanced stages of convalescence with safety at least, and sometimes with benefit. Exercise of the affected parts and friction are of use; and by degrees moderate and cheerful occupation of mind, avoiding excess and anxiety, will rather promote than retard recovery." 338.

It has been already stated that renal and cerebral diseases bear some relation to one another, and cases have been adduced in proof of this connexion. Diuretics might therefore be regarded important medicines, and in practice they appear of very considerable value. Upon what cause the constitutional derangement, which diseases the kidneys, depends, or in what precise man-

ner diseased kidneys act in producing cerebral disturbance, it may be very difficult to determine. In many cases the serum of the blood has been found highly impregnated with urea, but in others there is scarcely any, or none : and from two analyses, lately performed by Dr. B. Babington, it would seem that the quantity of this salt discoverable in the serum of the blood, in cases in which albuminous urine has been passed, is extremely variable. But how far the presence of urea, or of any other principle foreign to the blood, may act upon the brain as an excitant to disease is a curious and important question, which well challenges inquiry. Dr. Bright has certainly demonstrated the presence of albumen in the urine to be a very unfavourable state, which, if long continued, is liable to be attended by such serious disorganization of the kidneys as to admit of little more than palliative treatment. Since the appearance of his first volume of Reports, he has witnessed many cases of this nature, and he is still persuaded that general, or if the strength will not permit, local bleeding over the region of the kidneys, free purging, and the infusion of digitalis in dram doses thrice daily, are the best remedies in recent attacks. This general plan must, of course, be varied by the stage of the disease and other circumstances. When the affection appears confirmed, the union of mercury with the digitalis has proved serviceable ; when the constitution is delicate, gentle tonics have been given with advantage ; when the bowels are irritable, purgatives must be cautiously exhibited ; and as the cerebral circulation must always be regarded, in such states of the kidneys, as in a precarious condition, whenever headache is complained of it should not be neglected for a moment.

We have now described several common and most important sources of *cerebral pressure* ; but some still merit notice, which are not rendered the less interesting by their being the more rare. The cases, which follow, illustrate the effects of pressure from the presence of *tumours* in the substance, or attached to the membranes of the brain.

(163.) A talented and amiable man, aged 50, had been for many years subject to gout in the extremities and to occasional attacks of sick-headache. Fifteen years before his death an encysted tumour had been removed from his forehead, and five or six years previously he had received a blow on the head, which stunned him for a few seconds, but was followed by no consequences which attracted notice. In the Summer of 1824 he grew thin, failed in strength and spirits, declined his favourite amusements, and occasionally became abstracted even when in the bosom of his friends. During the Autumn of that year this indisposition to exercise increased, he could not be brought down from his bedroom until the afternoon, his nights were passed in watching and his days in anxiety and restlessness. He fancied that his "head was drawn towards his shoulders," yet upon the most minute examination no other symptom of head-affection could be detected. On the following January the Doctor was consulted for the first time. He was then quite able, though somewhat reluctant, to answer such questions as were put to him ; would sit on the sofa and read the paper without attending to it ; said that he felt a tendency to be drawn to the left side, and he directed his steps with difficulty, so that when he passed across the room he would sometimes rather run than walk. Occasionally he was very drowsy, and complained of pain in his forehead ; he grew irritable and almost irrational on

some points, and he became more and more helpless and more abstracted every day. In the Summer of 1825 he went for change of air into the country, and although he could still walk a little he was generally wheeled about in a chair. On one occasion of particular drowsiness a blister was applied to the whole scalp, which brought on erysipelas of the face, stranguary and violent spasmodic action of the left hand. In the Winter of 1825 he returned to town; after which he scarcely ever left his room, was fed, dressed, undressed and in short nursed like an infant; but still retained his consciousness, and was grateful for the attention which he received. Sometimes he had drowsy fits of 24 or 48 hours' continuance, with an approach to stertor, out of which he could be only roused for a moment, when he lapsed into his former state. The left leg was often spasmodically moved and the left knee drawn up, his mind wandered and fancied a thousand things; sometimes some strabismus was perceptible, as well as slight distortion of the muscles of the face, deglutition was extremely difficult and imperfect, the tongue was loaded in an extraordinary manner with a thick olive-colored coating, and his pulse was quick and weak, but variable. For many months before death the sphincters lost their power, the skin, which had been peculiarly dry and harsh, became soft and perspired freely for several weeks, he would lie motionless almost an entire day, and though the Doctor was not convinced that his left extremities were palsied, they had not the same power as the right. In May a second physician saw him, and recommended cold to the head and free purging, which however evidently weakened him, and in June he was attacked during the night with an epileptic fit of unusual severity, after which he never wholly regained his consciousness, though he survived the fit about thirty-six hours. The vessels of the dura mater were rather turgid and found to adhere to the anterior part of the right hemisphere, especially about an inch from the front close to the longitudinal sinus. The surface of what appeared to be brain at that part was opaque and hard, and when examined proved to be the top of a tumour which extended backwards almost four inches, and sunk into the hemisphere so as nearly to reach the ventricle. This tumour was covered with vessels, was lobulated on its internal surface, weighed nine ounces, consisted of an uniform cheese-like mass of considerable firmness, and was separated from the thin layer of brain, which interposed between it and the ventricle, by a small quantity of serous fluid. The rest of the body was quite healthy.

The history of this interesting case has been narrated with more than our usual minuteness, that the effects of slight but progressive pressure upon the sensorial functions may be traced. The first stage of declension from ordinary health is marked by no one symptom of a formidable nature; yet the mental powers gradually decayed, and the corporeal functions slowly dilapidated, until the tumour had grown to a size and occasioned a degree of pressure which life was unable any longer to endure. There can be little doubt that, had a foreign body of half the weight or size of this tumour been instantaneously introduced into the brain, death would have immediately ensued; but in this case, as in chronic hydrocephalus, the pressure was at first so limited, and during its progress increased so gradually, that health was at first impaired without being seriously deranged, function was slowly invaded without being suddenly arrested, and the resources of the constitution were permitted somewhat to struggle under and resist such te-

dious encroachment. It is to be regretted that the symptoms shed such little light upon the source from which they sprung, as they might all have been fairly taken to denote the existence of serous apoplexy. The treatment, though varied, was both active and appropriate, but no plan of cure which was adopted appeared to have produced the slightest good. Cupping was invariably followed by increased drowsiness; leeching gave no relief; blisters, setons and tartar-emetic ointment were applied in vain; purging and tonics were equally unsuccessful.

(165.) An elderly gentleman came under the author's care for palsy of the left side. For many years he had been drowsy in the evening, for the last two or three years he had often complained of vertigo, and during the two or three months prior to the Doctor's visit he had suffered much from headache. While dressing one morning, and in the act of gargling his throat, he threw his head back, felt giddy, and in an instant fell into strong convulsions, out of which he arose with the loss of his left side, save the leg which still retained some power. As his pulse was feeble leeches were applied to the temples, an embrocation to the forehead, and he was ordered a mixture composed of the compound infusion of gentian and tincture of aloes. On the next day he was better and the leeches and mixture were repeated; on the day following the sensation of the left hand improved; but during the next week he on the whole lost ground, and by the end of a fortnight he was deprived of all consciousness and, without suffering any fresh attack, expired in convulsions. The dura mater firmly adhered to the calvarium; the pia mater was very vascular; the convolutions over the middle of the right hemisphere were flattened and softened, and on cutting into the middle lobe of this side two hardened masses were found imbedded in the cerebral tissue, which was much softer than natural, and was not well defined around the margin of these tumours. One of these bodies was as large as a nutmeg, the other was the size of a London plum; the smaller was seated almost at the top of the hemisphere, the larger was nearer to the fossa Sylvii; both had the same structure and were of a lilac hue, with the exception of their centres which were occupied by irregular masses of a light straw color and of superior firmness to the more exterior structure. The fornix was very soft; the corpora striata and optic thalami were natural; the left hemisphere, cerebellum and medulla oblongata betrayed no disease; but the arteries at the base of the brain were slightly cartilaginous, and the left vertebral artery was not above one-tenth of the size of the right.

Our author is inclined to suspect that the first nuclei of these tumors were haemorrhagic deposits, and that the last fatal attack arose from the extensive softening with which they were surrounded. If this be so, and it is probable from the occasional fits of drowsiness and irritation to which this man had been subject for years, it strongly proves how long the brain may endure a certain degree of pressure, and yet carry on its functions with very tolerable aptitude. In consequence of the unimpaired state of the articulation, Dr. B. had anticipated that the posterior portion of the corpus striatum was exempt from disease, and dissection shewed that this prognosis was well founded. The author is disposed to consider the tumors in both of these last cases as corresponding with those albuminous deposits described in Dr. Aber-

crombie's Work upon the Brain. In the following instance they were decidedly tuberculous.

(167.) A delicate girl, aged 11, had a fit at school for which she had been leeched and blistered on the head, but from the consequences of which she had not entirely recovered when she was attacked with a second fit of the same kind, for which she applied for admission into hospital. The lower extremities were stiff, cold, shrunk and motionless, but sensible to the touch. The upper extremities were slightly affected, and the right arm was subjected to spasmodic tremors. The back was stiff, the dejections were voided unconsciously, the pupils were dilated, the veins of the scalp swollen, the cheeks flushed, and her screaming denoted considerable pain of head. The head was shaved, cold applied to it, a seton was inserted into the nape, and a purging pill was ordered every night. On the fifth day after she remained unimproved, and on the seventh the abdomen swelled, respiration was effected chiefly by the diaphragm, the pulse was 160, the eyes were directed to the left and motionless, the right arm was rigid, inflexible, and bent across the body, the mind was oppressed but perfectly distinct and clear; the countenance was pale and the appetite, which had been great, was lost. During the night coma, insensibility and hiccup came on, her mouth was spasmodically drawn to the right side, the eyes rolled incessantly, the muscles of the extremities quivered and twitched, and on the next day she expired. The pulse had risen to 176 until a little before dissolution, when it flagged during inspiration and "beat three or four hurried strokes during expiration." The head and extremities were very warm to the last, and a miliary eruption covered the entire chest. Two of this patient's family had died of hydrocephalus. Underneath the arachnoid were visible several irregularly-shaped yellow bodies, which felt hard but did not rise above the surface. Some of these were glued, others more firmly attached to the membranes, and when cut into many of them were found extending into the cerebral substance to the depth of half an inch. On raising the right side of the dura mater precisely the same appearance was discovered. Several smaller but more circular tubercles were found at the base of the cerebrum, always, however, seated as the preceding in the cortical substance, and some were detected in the cerebellum, corpus rhomboideum and cineritious texture of the medulla oblongata. A considerable part of the middle lobe of the left side was softer than the rest, but not obviously disorganized. There was no unusual degree of fluid under the arachnoid, and there was less in the ventricles than usual. No tubercles could be discovered in the spinal cord, which was rather soft; but the lungs, omentum, peritoneum, spleen and kidneys were filled with these morbid growths.

As has been already mentioned, the Doctor has hinted at the specific effects of injuries of certain portions of the brain upon certain functions and parts of the body, and in the present instance he is inclined to ascribe some connexion between the convulsions, which appeared during life, and the tubercular state of the cortical tissue of the brain. It will be noticed that there was no effusion of serum upon the surface or within the cavities of this organ, and so far is the source of this symptom rendered less difficult of discovery. Tubercles appear—

"To affect in a peculiar way the serous membranes, and, not unfrequently,

is attended with a disposition to an increased accumulation of fluid in the cavities, showing itself by effusion into the abdomen, or producing hydrocephalus: and it would appear that it is not necessary for tubercles to exist in the brain in order to excite the hydrocephalic action, nor is the effusion of fluid in the brain at all a necessary result of the existence of such tubercles.—Thus in the present case, though the tubercles had proceeded to a great extent, and induced the most distressing effects, no effusion had taken place: and in a case which I shall immediately relate, the effusion had taken place in a constitution exactly analogous, as proved by the other morbid appearances, without any tubercular formation in the brain; while in a third, to which I shall also refer, both the tubercles existed to a small extent in the membranes of the brain, and hydrocephalus had taken place;—from which different facts, it would seem that the hydrocephalus is rather the result of the constitutional tendency than of the tubercles, though these morbid deposits are probably often the exciting cause.” 361.

It occasionally happens that symptoms of *cerebral pressure* appear in a very aggravated form and even terminate in death, without leaving behind them in the brain any visible tokens of special disease. The membranes appear neither vascular, inflamed, nor thickened; the cerebral substance is apparently unchanged in texture, and there is neither upon its surface nor within its cavities more fluid than should exist in a healthy state. In some such cases the brain appears of increased volume, filling up the calvarium more closely than usual, as though intertextural nutrition had exceeded its wonted limits. This hypertrophied condition of the sensorium produces symptoms of pressure, similar both in their nature and degree to those occasioned by effused lymph. The following is a good illustration of this rare affection.

(171.) A man, of 45 years of age, who had been employed in a white-lead manufacture for six months, was suddenly seized while at work with loss of sense and motion, which was succeeded by stupor and occasional delirium. When admitted into hospital he could be roused with difficulty to answer questions, when he opened his eyes there was manifest strabismus, his bowels were costive, his tongue was loaded, and his pulse was 44 and labouring. The head being shaved cold was applied, fourteen ounces of blood were drawn from the nape, which was afterwards blistered, and a strong purgative was ordered. After passing a restless night ten ounces were again taken from behind the ears, and one grain was prescribed every second hour. He passed another sleepless and restless night, but he was more easily roused, his pulse stood at 76, and he saw distinctly. Sinapisms were applied to the feet, and his calomel was continued. Two days after he was cupped a third time to twelve ounces from the temples, constant violent delirium gave way to profound stupor, and his stools and urine were passed in bed, but without betraying any other paralytic symptom he expired on the following day. The dura mater appeared quite full and closely embraced the brain, which was so flattened upon its surface that the convolutions were marked only by the most superficial lines. As no fluid lay beneath the arachnoid the membranes separated from the brain, in consequence of this tightness, with difficulty. The cerebral substance was firm and natural, but the “medullary part conveyed the idea of being in great abundance and massive.” The ventricles appeared small, and each contained only half a dram of serum. The vessels at the base of the brain, as

well as those of the cerebellum and medulla oblongata, were healthy ; " so that the only disease was the compressed condition of the surface of the brain, occurring in spite of the total and unnatural absence of fluid, or of any other obvious cause which could occasion it." There was no disease of consequence in any other portion of the body.

In 1824 Hufeland published some observations on *cerebral hypertrophy*, and the author has seen a tendency to it in several other instances, particularly in children : but still it is a rare disease, and, like most others of this organ occasioning pressure, it is not marked by any symptoms so pathognomonic as to point out the source of mischief with any certainty. In other cases the brain seems oppositely conditioned, being in an apparently cachectic state, of diminished volume, and of increased consistence, as though condensed by prolonged pressure. In case 172 this state of brain is well exemplified by Dr. Hodgkin.

An elderly woman, whose mental and corporeal powers had been gradually decaying for some years, often felt a dull pain in her head, which was somewhat relieved by pressure, and was attended by giddiness and a drowsy vacant aspect of countenance. When first seen by the Doctor, in addition to these symptoms she had irregular bowels, a remarkably red tongue, and a general bad state of health. Leeches were repeatedly applied, but she experienced more relief from tonics and laxatives, and her appetite became inordinate, when compared with the relaxed condition of her general system. Her strength, notwithstanding, declined, she passed her evacuations in bed, a slough formed on the sacrum, a diarrhea came on which astringents could not control, and she ultimately sunk. The dura mater adhered with unusual firmness to the scull-cap, and in some parts was rough and scabrous. The internal surface of the scull was also rough. The arachnoid was healthy and it contained beneath it scarcely more moisture than natural. The sulci on the surface of the brain were wide, and—

" The convolutions themselves, instead of appearing to fill the whole space and gently press upon each other, producing a comparatively smooth surface, looked contracted, crisp, and corrugated, falling into slight hollows or dimples on those parts which are usually most prominent, and marked by shallow transverse depressions traversing the tops of the convolutions. The membranes came off easily, and then the corrugated appearance of the convolutions was more distinct, so that in some parts they almost assumed a notched form ; and this morbid alteration, which was observable throughout, was particularly marked upon the anterior portion of the middle lobe on both sides ; and some of the small projecting portions presented rather a lighter colour than the other parts of the cineritious matter. When a convolution was taken between the finger and thumb, it gave a sensation of unusual resistance ; and when pinched, the external layer of the cineritious substance was detached from the rest with great facility." 374.

The cerebral tissue was firm, but the inner part of the cineritious substance was softer than that more externally situated, and the medullary tissue was firmer at the edge than elsewhere. The ventricles were contracted, their parietes resisted the knife, and they contained very little fluid. The surface of the optic thalami was corrugated, the plexus choroïdes had many vesicles on their posterior part, and the large vessels at the base were marked by a few opaque patches.

Sometimes the brain is neither contracted nor dilated, but very much increased in firmness, so that the cerebral vessels are compressed and the circulation retarded. In other instances again it is soft, flaccid and tenacious, more especially in constitutions broken down by lengthened illness; and occasionally this "softening" which is not very rare, degenerates into a "watery condition" of the whole mass, as in some cases of diabetes and consumption. Difficult, no doubt, it is to account for the origin of disease in such cases, or to explain its *modus operandi* in causing death; but it is certain that a careful dissection can always disclose a state of brain very different from that of health. It happens, unquestionably, that palsy may occur and yet the brain betray no visible marks of derangement; but in all such cases its membranes should be carefully inspected, as experience has shewn that meningeal disease can induce paralysis as certainly and in as severe a form, as most palpable and extensive disorganization of the nervous mass.

"Cases of this kind are often preceded by rheumatic pains, and sometimes by distinct attacks of rheumatic gout, sometimes by well-marked neuralgic affections; and they are frequently to be traced to exposure to cold and wet. In some of them, examination after death gives satisfactory evidence of the existence of such results of inflammation as are well calculated to produce pressure, and at the same time proves the nature of the action which has been going on; but in other cases the appearances are scarcely sufficient to account for the symptoms. Still it is right that we should take into consideration the peculiar structure of the mass of nervous matter which composes the brain, and the numerous and complicated bundles of fibres of which the spine and nerves are formed, and the extent of the fine membranes to which I have just referred. Supposing, then, that the membranous structures are extensively influenced by morbid action, we easily understand how in many cases all the effects of pressure, or at least of interrupted circulation, should be induced, without the brain or nerves presenting any very great or obvious appearance of disorganization.—Nor is this view of the matter imaginary, but it is the conclusion to which I think we are fairly led by contemplating the slight but obvious changes which are very frequently exhibited in cases of a similar kind, and which will be learnt from some of the following cases, presenting themselves in the forms of thickened membranes,—slight adhesions,—thin adventitious deposits,—and serous effusion more or less extensive." 375.

In the 173d case a middle-aged man, a basket-maker by trade, at first experienced a sense of numbness in his legs and thighs, which ascended to the lower part of the body, and at length reached the upper extremities, but was particularly great in the little finger and that next to it of each hand. Setons, blisters, tartar-emetic ointment, moxa, nux vomica, the mineral solution, the shower-bath, Peruvian balsam, and free purging were successively tried in vain; head-ache at last came on, delirium followed, and he expired. The dura mater was remarkably vascular, thick, tough, and firmly adhered along the glandulæ pacchionæ and anterior part of the right hemisphere to the arachnoid, which was opaque, much thickened, and contained beneath it a moderate quantity of fluid. The ventricles contained four ounces of limpid serum, but the brain was healthy. The foramen magnum was much diminished by a thickened state of the ligaments. The spinal cord was very small.

In the 175th case the disproportion between the post-mortem appear-

ances, cerebral disease and symptoms which accompanied it during life, is very striking. Suddenly, as it was supposed, from exposure to cold, the patient completely lost her sight, yet the only part of the brain, in which any deviation from a healthy state was discoverable, was in the medullary portion of the optic thalami, which however presented no visible change in structure or consistence, being merely discolored to some extent with an opaque light buff. She was also with equal suddenness deprived of both the power and sensation of her lower extremities, and the bladder had become palsied, so that her urine accumulated on one occasion to seven pints and a half; yet nothing unnatural could be detected in the spinal cord, with the exception that its surface presented a series of transverse elevations "as if it were too firmly bound by the investing membrane," and there was nothing worthy the name of disease in the brain or cerebellum.

In the 177th case general paralytic symptoms came on after exposure to wet and cold, and, although they were combated by bleeding, purging, &c. they proved themselves beyond the influence of medicine. The dura mater was found healthy, but the arachnoid was slightly opaque and covered some fluid. The brain was natural in appearance, but the ventricles contained too much serum. The spine could not be examined.

Absorption of *lead* into the system is a well known and not an unfrequent cause of palsy; but as it has not yet been shewn whether any other portions of the nervous system are affected than those nervous masses, which immediately supply the palsied organs, *paralysis from lead* is generally regarded in the light of a local disease, requiring more especially local treatment. The intestinal tube and upper extremities are the parts, upon which this poison more immediately operates; occasioning constipation of the most intractable form, and palsy of the extensor muscles of the forearms, by which they are more or less deprived of the power of raising the hands. Young plethoric persons, just fresh from the country, are its easiest victims; and the Doctor believes that while the painter is more frequently attacked with palsy of his arms, the lead-manufacturer is more obnoxious to the abdominal affection. Exposure to cold and wet, neglect of personal cleanliness, and the intemperate use of spirituous liquors, evidently predispose the constitution to the operation of this poison. In some cases the very freest contact with this mineral for years is succeeded by no bad effect; while in others it cannot be handled for as many days with impunity. In one instance a waterman lost the power of his hand without any previous ailment, from having painted his boat. The Doctor is somewhat inclined to suspect that however this nervous affection may appear to be local, the brain and upper part of the spinal cord are not always unaffected. As he justly remarks, there are two sets of symptoms in this disease—one of which betoken intestinal disorder, as colicky pains, furred tongue, sickness of stomach, a tympanitic state of the abdomen and constipation—the other a paralytic affection, which is often ushered in by headache, vertigo, and a sense of weight and pain between the shoulders. These latter symptoms are supposed by the Doctor to denote some cerebro-spinal irritation; and although he has not had any opportunity of substantiating this suspicion by examination, it has received very considerable countenance by the relief which has followed cupping from the nape.

(184.) A man, aged 36, who had been painter for 25 years, but had never suffered from colic, seven years before admission into hospital was seized with giddiness, headache and the sudden loss of his hands. When attacked he had been engaged in *flatting*, a process it would appear peculiarly noxious in its effects upon the body; for nine months he required to be fed, but he ultimately got well and recommenced his occupation. Two years afterwards he was again seized by the same symptoms, which again disappeared after continuing four months; and at the period of his admission he laboured under palsy of the arms and hands. Blood was drawn from between the shoulders, strong opening medicines were given thrice daily, and a tepid bath was used on alternate days. A week after a blister was applied between the shoulders. This was followed by repeated blisters to the arms, colchicum and camphor mixture were given to relieve wandering pains which were complained of, and the cure was completed with Peruvian balsam.

(185.) A painter, aged 30, of irregular habits, and who had been employed in his trade for fifteen years, suffered under four attacks of colic, the last two of which were accompanied by some dropping of the hands. On the 28th of November, while flatting, he experienced a feeling of tightness and burning across the scrobiculus cordis, followed by pain in the umbilical region, numbness of the shoulders and arms, acute headache and obstinate constipation. The abdomen was fomented, a tepid bath was ordered, and a pill, composed of tartar-emetic and opium, was given every six hours, with occasional aperients. On the 3d of December he felt little if at all better, when twenty leeches were placed on the abdomen, and the aperients and pills were continued. On the day after 30 leeches were again applied, which very much relieved his bowels; but a sense of burning pain was felt about the centre of the sternum, shooting across to the back and increased by inspiration, for which a blister was ordered and three grains of extract of hyoscyamus, with two of camphor, were given every six hours with success. Until the 10th he was convalescing, when a "gnawing sensation" was felt between the shoulders and down the arms and legs, which required the application of fifteen leeches. On the 12th the pain in his back was gone, but he felt "weaker than ever." Eight ounces of blood were withdrawn from his nape by glasses on the 12th; as much more on the 13th; and as much again on the 14th; under which treatment he so rapidly improved as to be able to leave the hospital in a few days thereafter.

This case is strongly corroborative of the author's views, as to the implication of the brain and upper part of the spinal cord in saturnine palsy. Although the pain, which had been at first experienced between the shoulders, had been wholly removed by the leeches, still his complaint remained in every other respect unabated, until by repeated cupping the cerebral congestion, which no doubt was the remote cause of the great weakness complained of, was entirely and permanently dissipated. In the 187th case the same principle is perhaps still more forcibly illustrated. A countryman, aged 43; who had always enjoyed good health, came up to town and was employed in a paint-manufacture in grinding and mixing preparations of lead, mercury and arsenic. Seven weeks had elapsed in this occupation when a pinching sensation was felt about the abdomen, accompanied by costiveness

and followed by numbness and tremor of his right hand; violent headache, dimness of sight and a copious expectoration of mucus streaked with blood. Cupping on the nape and aperient medicine gave him some relief ; but as his abdomen was very painful twelve ounces were taken by glasses from the scrofuliculus cordis and the aperients were continued. During the second day after he was admitted his headache became intense and in the night he was attacked with a fit of violent delirium, which lasted three or four hours ; for which leeches were applied to the temples, a blister to the nape, and five grains of the ext. hyoscam. were given every four hours. On the next day he was much better, but his head was still afflicted by shooting pains, and until he was dismissed cured he was occasionally subject not only to them, but to wanderings of intellect and general agitation. The last case, which we shall record, was treated by strychnia, and although its exhibition was long continued before any very palpable benefit was produced, yet the Doctor thinks that its employment was on the whole productive of good.

(186.) A middle-aged man, who had followed the occupation of painter for twenty years, and had experienced during that period three rather sharp fits of painter's palsy, came under the Doctor's care, on the 4th of November, with rigors, obstinate costiveness, and pain and weakness in the arms, with a general feeling of debility. Opening medicine was given, a blister was applied to the elbow (right ?) and splints were placed along his arms and hands. On the 8th little change was visible, when the twentieth part of a grain of strychnia, dissolved in alcohol, was applied to the blistered part over the extensor muscles of the (right ?) fore-arm. On the 10th, the quantity of strychnia employed was increased to the tenth part of a grain; on the 11th, to the 8th ; on the 12th to the 6th ; on the 16th to the 4th, and on the 17th to the 3d of a grain. A considerable degree of pain and some spasmodic starting of the affected muscles soon succeeded each application of the strychnia, and on the 13th the arms were "decidedly relieved." One-third of a grain was applied almost daily from the 17th of November till the 15th of December, with the effect of producing very marked spasms, and rendering the right arm, which was at first the weaker, much the stronger of the two. On the 15th of December erysipelas of the face came on, and the nux vomica was not afterwards employed; but the patient slowly improved, and after some weeks left the hospital much better, yet still weak.

From these cases the reader will be able to make himself tolerably familiar with the mode of treatment which Dr. Bright employs in this disease. It appears to us that the good effects of bleeding from the nape are rendered so obvious by them that, however physiologically difficult it may be to associate the local paralysis with the cerebral disturbance, or to explain in what way the relief of the latter can promote the removal of the former, it will be of great practical importance to keep in view this connexion. It would, unquestionably, be desirable to ascertain how far the pathology of the brain and cord in such cases countenances this theory; but we are so far persuaded of its plausibility from the evidence before us, that we anticipate with tolerable confidence its support by future observation. It has been usual since the days of Darwin to combat the spasmodic pains, which so usually accompany the intestinal apathy in palsy from lead, with large doses of opium, and this practice has been sanctioned by its success ; but on referring to the

work before us, it will be seen that this medicine has not been very largely employed, and never save in connexion with opening medicines. If congestion of the brain or cord have any thing to do with the production of either the paralytic or spasmodic symptoms of this affection, it is obvious that the removal of such a state will be more effectually promoted by local depletion than antispasmodics, and that the use of opium must be limited to the counteraction of an effect, rather than to the dissipation of the cause. The warm bath, fomentations and poultices will tend to allay the abdominal irritation ; and blisters to stimulate the palsied members with splints to support them should not be neglected. Purgatives are required to overcome the torpor of the intestinal tube, and it has been customary to administer them in large doses ; but Dr. Bright cautions us against such treatment in the following terms—

" Calomel and other purgatives should be used with some caution, and not continued after the actual necessity for their exhibition has ceased, as the large intestines are in a peculiar and a feeble condition, and not well able to resist severe irritation ; so that I have undoubtedly seen, extensive destruction of the mucous membrane of the colon, induced in this disease, by the injudicious use of purgatives : and it is by keeping down the tendency to inflammation that leeches applied to the abdomen, and sometimes to the anus, are found of great service, not only giving relief to the pain, but facilitating the action of purgatives.

The diseased condition of the mucous membrane of the colon in cases of this kind deserves well to be borne in mind: the frequent irritation to which the viscous is exposed appears gradually to thicken the cellular substance beneath its mucous membrane, so that the surface becomes thrown up into ridges, thick, hard, and unyielding ; and the membrane itself seems to lose part of its power of resisting injury ; it becomes abraded, and is discoloured by the faeces, and covered with shreds, probably in part derived from the separating and sloughing of the membrane itself, and partly from the effusion of lymph.—It is not only in colic from lead that this condition of the colon exists, but I have seen it take place in other cases of obstinate or habitual constipation ; particularly after the employment of much purgative medicine." 393.

It was once believed that *lead* was the only mineral, which could induce palsy ; but a more perfect acquaintance with these substances has demonstrated the fallacy of this opinion. It is not improbable but that most of the mineral poisons, if taken in small quantities and for a sufficient length of time, might act upon the nervous system in a way somewhat analogous to that now described, as we have reason to believe that most of them convey their baneful influence into the constitution through the medium of the nerves. The Doctor has met with some instances illustrative of the agency of mercury in this respect, when long permitted to operate upon the system ; but the symptoms which it occasions are in many points different from such as characterize the agency of lead.

(243.) A water-gilder, aged 31, of intemperate habits, who had already suffered an attack of palsy in consequence of his occupation, was admitted into hospital labouring under headache, soreness of the gums, and an involuntary convulsive motion of his hands. " If he attempted to make any voluntary exertion, as taking hold of any thing, the hand was thrown in every direction with short but violent convulsive catches. When lying quite un-

disturbed the motion was often for a time suspended ; he had also a hurried, convulsive, and indistinct mode of articulation—the left (hand) was most convulsed and the moment he was spoken to the convulsive action increased." After his bowels had been well opened with castor oil, to which a few drops of laudanum were added, he was put upon low diet and beef tea, and ordered one grain of the sulphate of zinc three times daily, with the subcarbonate of ammonia julep. Three days afterwards the zinc was increased to two, again to three, and ultimately to eight-grain doses. At first a burning sensation was experienced in the hand most affected, together with some headache and vertigo ; but the tongue cleaned, the pulse came down, the spasmodic action grew less violent, the speech improved and, after more than three weeks' employment of the zinc in the doses just mentioned, he left the hospital almost well.

(241 and 2.) A man and his wife applied for assistance at Guy's Hospital with the following symptoms. They were emaciated and sallow, unable to stand steadily or speak distinctly, and they were excessively weak. Their gums were ulcerated and their teeth loose, the least mental emotion aggravated every symptom, and when ordered to grasp any thing with their hands it was obvious by their movements that they were to a certain degree independent of the will. This couple were in the habit of supporting themselves by extracting mercury, by means of pressure, out of the leathern bags in which it is imported ; and as their dwelling was not only their sitting apartment during day, but also their bed-room and their workshop, its air was constantly impregnated with this mineral. The woman lost most of her teeth, and, worn out by constant irritation, died. The man was removed from this impure atmosphere, took stimulants and tonics and recovered.

" The cases which I have thus witnessed (says the Doctor) present a considerable variety in the mode by which the poisonous influence of the mercury has been communicated ; but in all, the atmosphere was probably impregnated in a very high degree. The symptoms as well as the general treatment which appears to have most power in controlling them, point out some analogy and connexion between this disease, and chorea ; and though there is something quite peculiar in the character of the agitation, and the quick spasmodic catches, which are not to be mistaken; in the palsy from mercury, yet the actions are spasmodic as in chorea, and, as in that disease, they affect the muscles of the extremities and the power of articulation, and, as in chorea, they are rendered more and more severe, the more the mind is agitated : but there is this difference, that in chorea the irregular motions are often for a short time under the control of the will. With respect to remedies, a due regulation of the bowels, and the administration of tonics appear the most efficacious in both diseases. In chorea likewise, if we can discover the exciting cause, we strive to remove it ; but in the palsy from mercury, the exciting cause being obvious, we are more directly led to its removal as a chief indication in the treatment." 499.

There still remains one other cause of cerebral pressure, or rather one other class of causes, with a brief reference to which we shall close the present article. When the brain or its membranes are injured by external violence, such as by blows or falls, symptoms are not unfrequently occasioned which strongly resemble those that result from ordinary apoplexy. Sometimes the mental functions are instantaneously extinguished or eclipsed, the

stomach soon discharges its contents, then a state of sopor supervenes out of which the patient can be roused with difficulty, and after a few hours or a few days every unfavourable symptom gradually subsides. In other instances symptoms of cerebral irritation, if not of actual inflammation, succeed to the period of collapse, and violent delirium, convulsions, palsy and apoplectic coma precede death. In cases marked by the former set of phenomena, the brain is considered to have suffered *concussion*; when the latter are observed phrenitis, or meningitis, or both are apprehended. Concussion is, however, equally formidable in its effects with actual inflammation; and it becomes a question of some interest to discover the immediate state of brain attendant on this affection. In cases of death from concussion almost the only appearances, it would seem, are minute lacerations of the brain and its membranes, either upon its surface or within its substance. When such injuries can be detected there can be no difficulty in accounting for death; but where no such appearances nor indeed any vestiges of structural injury are perceptible after the most attentive autopsy, it must be acknowledged that it is more easy to conjecture than to demonstrate the proximate cause. No doubt an organ, so delicately organized as the human brain, may receive even textural violence without betraying it to the rude inquest of the scalpel; and it is equally capable of belief that functions, at the same time so essential to life and so easily deranged, as those which this organ is destined to discharge, may be suddenly and for ever arrested by an act of violence, not rude enough to stamp its impress in such palpable characters as to be deciphered by the eye of the anatomist. Therefore, it has been usual in all such cases to fancy the existence of what we cannot see, and to regulate our treatment on the presumption that, if the brain or its appendages be not actually disorganized, they have been so violated as to demand from us the same attentive, prompt and energetic management. Symptoms of *pressure from accidents* may depend upon fracture of the skull and depression of the fractured bone—upon detachment, or laceration of the dura mater—upon effused blood between it and the calvarium, or between the arachnoid and it—upon laceration of the arachnoid and pia—upon the effusion of blood between these membranes and brain—upon laceration of the cineritous or medullary, or of both these portions of the cerebral tissue; and, lastly, upon the extravasation of blood into any of its ventricles. As the bare enumeration of these different effects of external injury is all that we can pretend to in the present place, more especially as they are purely surgical subjects, we shall merely extract one or two of the most interesting histories, which the Doctor has brought forward, to illustrate the effects of pressure upon the spinal cord.

(197.) About six weeks before his admission into hospital, W. B., aged 20, experienced some pain at the upper part of his neck, accompanied by stiffness, but without knowing from what cause, and when admitted his head was bent forward upon his chest, he complained of pain when the cervical vertebrae were pressed, there was an apparent displacement of their spinous processes, and his right side was almost completely hemiplegic. Leeches and other local measures were at first employed; but his neck still fell forward and his step was palsied. A seton was then inserted into his neck, and various remedies were tried; but he became obviously weaker. In the lat-

ter end of November the left leg began to lose its power, but not its sensation, and felt cold ; in January he experienced cold chills, and complained of dyspnœa attended with constriction across the chest ; in February erysipelas attacked his face and head, and he became quite unable to move any part of his body ; and without having ever felt the least headache, or head symptom of any kind, he sunk. No disease could be detected in the brain. The processus dentatus of the second vertebra was so enlarged and displaced that the foramen magnum was much contracted, and the spinal cord at this point looked vascular and presented a darker color than natural for the extent of about a pea. In one or two other portions the spinal cord showed evidence of congestion, but it was so slight as not to be admitted by some present.

In this case the displaced dental process seems to have pressed more especially upon the anterior column of the spinal cord, seeing that with the exception of slight numbness and a feeling of cold, the palsied parts were in full possession of their sensibility. In that which follows the same phenomenon is illustrated, but as arising, not from any independence of the motive and sensory nerves, but from general osseous disease.

(198.) A black sailor was admitted into Guy's with immovable stiffness of his neck and general rigidity, so that he walked badly, raised his arms with pain, and was perfectly unable to open his mouth. Every plan was taken to relieve him but without effect, and he at last died, having previously lost almost all power of motion, without his faculty of sensation being, however, in the least impaired. "The disease wanted (says the Doctor) some of the characters of paralysis ; it was like the stiffness of chronic rheumatism, without any of the swelling." The lungs were full of small, hard tubercles—the skull-cap was thick and remarkably heavy—the arachnoid was somewhat thickened and opaque—the brain was firm, but rather exsanguine—both the occipital and dental articulations of the atlas were diseased—the processus dentatus was also diseased, and slightly displaced—the rest of the cervical vertebræ were ankylosed—the lower jaw was also immovably attached to the upper jaw at both articulations.

By an unfortunate oversight the other joints of this subject were not examined ; but, from the rigidity in his motions during life not having been confined to the neck and jaws, there can be little doubt but that the osseous disease was much more extensive, if not general. Having, with these remarks, arrived at the Doctor's third section, on *Diseases of Irritation* connected with the nervous system, to which the whole of his second volume is appropriated, we must again part with these *Reports* for the present, leaving for the next number our third and last article on this most practical and increasingly interesting performance. Till then we shall refrain from alluding to one or two points, connected with the diseases now described, which merit the attention of the reader ; and also from stating, more fully than has been already done, the very high esteem in which we hold Dr. Bright as a scientific pathologist and practical physician.

II.

THE BOOK OF ANALYSIS, OR A NEW METHOD OF EXPERIENCE ;
WHEREBY THE INDUCTION OF THE NOVUM ORGANON IS MADE
EASY, &c. By T. J. Todd, M.D. London, 1831, pp. 186.

To those, who have made themselves intimate with the medical literature of the last thirty years, and have traced with care the progress of its advancement in some departments and the causes of its decline in others, nothing can have appeared more amazing than the unphilosophical, unconcocted trash, which has been teeming in volumes of every size from the medical press of this country. While it is truly curious to analyze the present spirit of authorship it is most dejecting and unconsolatory to witness its effects. A few observations most hurriedly made—a few fancies most rudely arranged—or if you will, a few facts carefully collated are laid down as the frame-work of a momentous publication in which general systems are dissected and condemned, preceding authorities are swept into annihilation by broad and dogmatic assertions, and a new creed is proposed for adoption which contests not only its superiority over all that has gone before, but its perfect adaptation for all future ages, nations and constitutions. A few rare and interesting specimens of disease are witnessed by the young practitioner, either in the wards of the hospital in which he received the elements of his education, or during the first months of his professional career ;—these are embellished with imposing speculations, enriched by marginal references, loaded with a learned appendix, prefaced with a pompous dedication, and, emblazoned with a title-page, which promises every thing but what is to be discovered in the text. This essay—thus got up—is advertised into being by some interested publishers—puffed into notice by a few hireling scribes—sold and circulated—read and quoted—referred to as authority on points of faith, and ranked among the *monumenta laborisqu' ingenii* of the age, until its baseless pretensions are laid bare by the discoveries of subsequent writers, and all its facts and fancies are unsettled and unsaid.

Far be it from us to assert that this sketch of *book making* is universally, or even generally applicable. There are many to whom this censure will not attach, and we do most devoutly look forward to a speedy and large increase of their number. But it is undeniable, that very many of our present publications are scarcely worth the warehouse-material of which they are composed, and that not a few of them are positively injurious. False facts and distempered fancies are thus put forward to the world, which those, who cannot contradict, too frequently believe ; while their refutation occupies the time of such as they are unable to convince. The remedy, which the author now before us would apply to all these grievances, is a rigid course of *inductive analysis*.

"The means, which my* views of the improvement of medicine embrace, are neither many nor complicated. They may be comprehended in a few words—true, distinct, circumstantial observation—clear, severe, searching analysis." 118.

"I feel myself fully warranted, by long and ample experience, in affirming, that, whether it be considered in its scientific relations, or in its practical details,

no department of knowledge so urgently demands the wholesome reform of a close and scrutinising induction.

Although the practice of medicine must be admitted to be unquestionably one of the most difficult of all the arts, it is still no easy matter to answer the question, which may very fairly be asked, why the art of physick, one of daily necessity and of daily exercise, should have improved so slowly, and been so devious and unsteady in its progress, and that after a written experience of more than two thousand years, it should still remain an instrument of such doubtful and uncertain application. I am by no means of opinion that the complex nature of the subject* which forms the business of medical research and of medical operation, furnishes a satisfactory explanation of this anomaly. The phenomena of health and of disease, the effects of food, of remedies, and of every agent capable of exerting an influence upon the living body, are objects of simple observation, are as cognizable as any other class of facts, and as certainly subject to a regular order as any other series of events. No one, arguing only from the past, has a right to say that this order is beyond the reach of observation, or that it is impossible to establish certain fixed principles concerning the manner in which these phenomena and these effects have place. And, consequently, no one has a right to deny that it may yet be possible to establish corresponding principles concerning the manner of producing these phenomena by art, of preventing them from taking place, or 'in quantum fert mortalium sors,' of arresting their progress. If these propositions, which are the general and compressed argument of Cabanis, be fairly put, it follows, that the cause of the uncertainty of medicine is not so much to be sought for in the difficulty of the subject as in the manner of observing and of studying it." 108.

We most cordially acquiesce with these sentiments, and we wish the profession could be made to feel their justice as acutely as they come home upon our own minds. With one part of it, we are grieved to believe, that it has become quite fashionable to designate medicine the science of chances, and to treat it in their own practice as an empirical humbug, which rests its reputation upon popular credulity. They make a boast of the uncertainty of physic, of the mysteries of disease and of the mummeries of practice ! But such men are a disgrace to medicine. They are empirics, because they treat it as empiricism—they are grossly ignorant, because they will not stoop to the labor of making themselves acquainted with its resources—they neither know the extent to which disease is curable, nor the power which drugs possess, because they have entered their profession not as a science but as a trade ; and because, forsooth, they kill their patients as often as they cure them, and are disappointed with the operation of medicines as frequently as they experience their efficacy, in consequence of this their own voluntary, gross and unpardonable ignorance, medicine must be held to be all a farce—a fable—a useless and unscientific imposition ! But let us caution these slanderers of the healing art against conduct so unworthy. Let us tell them that not only is the deprecated and exaggerated uncertainty of physic, to a very great degree the effect of their own gross ignorance ; but that if ever medicine shall become the thing they would seem to wish, it will only happen through such base conduct as they are guilty of. Let

* " *Subjectum istud medicinæ* (*corpus nimirūm humanum*) ex omnibus quæ natura procreavit, maximè est capax remedii, et vicissim illud remedium maximè est obnoxium errori. Eadem namque subjecti subtilitas et varietas, ut magnam medendi facultatem præbet, sic magnam etiam aberrandi facilitatem. Quo circa quem admodum ars ista (quo præsertim nunc habetur modo) inter præcipue conjecturales ; ita inquisitio ejus reponenda est inter summè arduas et accuratas."

them look to every name on the long list of the *Æsculapian* line, and they will find that the calumniators and cavillers of the faculty have invariably been the most uninformed, as well as the most unsuccessful; while patient industry was rewarded by the general improvement of the science, and the most splendid talents were impressed with a lively sense of its importance. Are we to be told that medicine can do nothing, because such as are ignorant of it can do nothing with it; or that it never will do any thing, because those, upon whom its progress depends, shamefully neglect it? In no instance that occurs to our recollection has any one branch of the healing art been perseveringly and judiciously cultivated, without recompensing the enquirer; and whenever we feel any tendency to such unreasonable scepticism as we are now reprobating, the very consciousness of such a state of mind should be taken as a proof, either of our being naturally disqualified for the profession, or of our having rendered ourselves such by negligence and misconduct. Let us not be understood as meaning that there is no uncertainty in medicine, no obscurity in disease, and no difficulty in attaining a thorough knowledge of the genuine principles of the healing art. Experience forbids such a supposition; but we do mean that much of the uncertainty, obscurity and difficulty, which is encountered, has arisen and continues to flow from the irrational manner in which medicine has been taught and studied. This no one can deny, who is capable of forming any opinion upon the matter; and, therefore, it is with wretched taste that those men, who vilify medicine as empirical, stamp upon it such a character, seeing that they themselves are the very men, to whom it is mainly indebted for whatever empiricism may attach to it. General inferences are drawn from particular premises, individual cases are made the models of entire epidemics, effects are confounded with causes and causes with effects, the sequent with the antecedent and the antecedent with the sequent, resemblances are discovered where none exist, and points of difference are detected where more minute inquiry could have found nothing but accordance. We write ourselves into practice, and when we have got it, the conviction of our having written on matters we did not understand makes us endeavour to explain away the errors our inexperience has committed. Thus are the more matured periods of our lives spent in rectifying the blunders of our earlier years, and is the profession, which we entered for gain, rested to satisfy our pecuniary necessities at the expense of every thing which can render it desirable.

"Medicine (Dr. Todd justly remarks) is not a science of experience in the same sense as the other sciences, for no other reason than because the instrument and the art of experience have never yet been applied to it. Were it possible to place medical facts within the grasp of induction, medicine must necessarily stand on the same footing as any other science of observation, perhaps of experiment. The materials of experience are not wanting. The stores are ample and well-furnished. Every day is busy in producing more, and perhaps of a better kind. There is nothing intrinsically in the nature of the facts which are of the province of medicine which prevents them from being analysed and reduced to order, and from being thus made to contribute more or less to the common stock of experience. The analysis of medical observations is no doubt beset with some difficulties which are only to be overcome by the united labours of many, and by repeated efforts; but if this important work was only undertaken in a right spirit, and steadily persevered in—if the method of observing was reformed, if the observations were subjected to the assay of a searching induction, it is impossible to foretel what might be the happy results; and certainly not

before such a trial has been fairly made, is it allowable to say, that medicine cannot be elevated to the rank of the other sciences. This is no new view of the matter, no enthusiastic anticipation, the offspring of a new theory. It is the opinion of Sydenham* and Baglivi,† equally disciples of Hippocrates and of Bacon, and the two most illustrious names, who, since the revival of letters, have honoured and adorned our art.” 113.

Many, we believe, permit themselves to be offended with their profession by expecting it to do more than it promises, and by thus meeting with disappointment. They forget that it is not an abstract science—that its principles neither require, nor admit of demonstration—that the machinery by which and the materials upon which it works are of such a nature, as to preclude the very possibility of unerring, uniform and strictly mathematical results. The same disease is modified by a thousand circumstances, over which we have no control; the same constitution varies from causes which we cannot explain; and the same medicine depends for sameness of operation upon so many fickle contingencies that, without giving rise to any paradox or meriting any blame, it may produce almost opposite effects upon the same system under different states of constitution. These undeniable facts are wholly lost sight of by our imperious lawyers and our critics of the broad sheet, when the character of medicine, or the reputation of the faculty becomes the subject of animadversion. If all the questions, which in their wisdom they think proper to propose, cannot be unqualifiedly answered—if we cannot lay our rule and plumb-line to every circumstance and statement, medicine is called an unsatisfactory science, and medical men are ridiculed in open court. Truly, many of those, whom we have seen in witness-boxes, well merited the legal castigation which they met with; and, while we abhorred the impudence and coxcombry of the powdered wig, we could not help subscribing our name in full to the justice of the punishment. But it should be known by men, who thus step out of their own professional province to take such public liberties with those who ought to be, if they are not, their entire equals both in talent and attainment, that the very essence of our science is obnoxious to variation, and that those results, upon which we can most safely depend as being the most carefully arrived at, are at the very

* “ Si vel unus tantum per singula mundi secula hoc modo unicum tractaverit morbum, medendi ars, (quæ medicorum est provincia,) à multis retro annis ad ἀκμὴν pervenisset, omnibus, *absoluta numeris*, saltem in quantum fert mortalium sors.”

† “ Enim vero dum tota medicinæ prudentia in eo posita videatur, ut morbum cum morbo, tempus cum tempore, hominem cum homine compares, quo adventitia, et crescentia mala suis certis signis, ac nominibus ea distinguere, iisdemque idonea aptave remedia adhibere queas, nemo certè inficias iverit, nullam prorsus, et nobilissimæ scientiae exornandæ, et curandis hominibus utiliorem operam navari posse, quam si præstantissimæ artis studiosi, immenso retro tempore jam factas a majoribus nostris observationes attenderent, novasque in dies animadverterent ac notarent. Quam quidem promovendæ artis rationem, si jam inde ab Hippocratis temporibus ad hanc nostram usque ætatem constanter homines retinuissent, dici vix potest, quot quantique progressus hac hodie parte haberentur. Cum vero rem aliqui adeo necessariam, tam præclaram, atque ita feliciter institutam reliquerint, ut se infinitis et (ut Apostoli verbis utar) *interminatis questionibus*, λογοτακτις implicarent, aliam afferre causam non possem, quam offensi, ac ulsciscentis Numinis iram.”

best in general only little better than near approximations to abstract truth. It must be as palpable to every one in the profession, as to those without its pale, that it is becoming quite the *ton* to laugh both at physic and physicians. Scarcely is there a newspaper, in which may not be found sneers, insinuations, or direct charges against us, either for carelessness or ignorance, stupidity or selfishness; and although the penalty we are made to pay is probably beyond our crime, all this abuse can be traced with ease to our own conduct. Were we less easily led away by names instead of things, by modes instead of entities, by probabilities instead of certainties, by authorities instead of facts; did we observe attentively before we decide positively, did we experiment generally before we conclude universally, did we theorize less, philosophize more, write only what we know, and know only what we have good reason to believe, we would, in our opinion, soon become less the prey of empirical impostors on the one hand, and less the butt of forensic raillery on the other. Nothing can be more subversive of all good than a hasty and uneducated spirit of inference, which conjectures truth to save trouble, and hazards the merest fancy of the imagination rather than labour out the demonstration of a practical problem by an unwearied scrutiny of disease; and, therefore, nothing can be more conducive to obviate all these pernicious practices than an unyielding obedience to rigid, inductive experience.

We have our own misgivings, notwithstanding, as to the unaided sufficiency of this remedy in rectifying so many vices. But that all may be equally capable of judging with ourselves, we shall lay down a hasty outline of the Doctor's remedial plan, with this necessary remark, by way of preface, that our sketch will be confined to the bare principles of his system, sending the reader who seeks for further information, to the *Book of Analysis* itself. The Doctor recommends a series of tables to be constructed according to the different subordinate intentions, which they are designed to accomplish. By means of these tables all the circumstances, connected with any particular facts or instances, are classified by signs or hieroglyphics, according to their points of resemblance or dissimilarity. Each instance or case is noted down and expressed by some letter of the alphabet, which is its sign; and each circumstance is written down in full by itself in a separate column. The signs of the instances are arranged in their respective columns in the following manner—

" Taking A to represent the first, B, the second, and so forth; as the circumstances of the first instance were written down in the broad column, or *column of circumstances*, (in the order in which they presented themselves,) the sign A was placed opposite to each, in the column of the first instance. In the same manner, in the second instance, for every circumstance which had already been found in the first instance, A was placed in the column of the second instance. Such circumstances as had not been found in the first instance, were added to the column of circumstances, and the sign B was placed against them, in the column of the second instance. In like manner, in the third instance, the circumstances, the same as those of the two preceding instances, were denoted in the column of the third instance by their signs, A or B, respectively; and such circumstances of the third instance as were not found in either of the preceding, being first noted down in the column of circumstances, were denoted by a new sign, *viz.* that of the instance C. And so on in all succeeding instances, the same circumstances recurring continued to be denoted by their original sign, and

every new circumstance, being first inserted in the column of circumstances, by the sign of the instance which it first occurred.” 25.

It is thus obvious that the relations of the signs indicate those of the circumstances, and that, by ascertaining the degree and constancy of these relations, the relative position of every circumstance—whether cause or effect, the effects of a common cause, or the cause of a common effect—is accurately ascertained. In a third column these signs are brought out of the column of instances, and arranging all the same signs together, each is placed in its own vertical line. In this way all the circumstances common to all the instances, however numerous and complicated they may be, are adjusted under their common sign; and this part of the Doctor's process is called *classification by affirmative circumstances*. But it is not difficult to see that this plan of classifying does not only indicate the relationship, which subsists between all the circumstances placed under the same sign;—it also denotes the *absence* of relationship between different signs, since each succeeding class of circumstances is excluded by its predecessors.

“ Thus the class A of circumstances having been found present when the class B of circumstances was absent, according to the principle* laid down by Lord Bacon, the class A excludes the class B.† In the same manner, the classes A and B exclude the class C, and so on, the other classes successively. Therefore, as it is the effect of this process of classification to bring together under the same sign all those circumstances which have co-existed, so is it to exclude from each other, and to distinguish by different signs, those which are independent of each other.” 29.

This gives rise to another mode of arrangement, which he calls *classification by negative circumstances*, and which is attained in the following way—

“ For any circumstance of the class found in any instance, the sign of the class must be placed opposite that instance in the column of the circumstance, and so on for all the succeeding instances. But when in an instance any circumstance belonging to a class is found defective, the sign of that instance, instead of the sign of the class, is to be placed in the column of the defective circumstance; and this defective circumstance must retain the same sign in all the subsequent instances. In this way, a second classification, and a second process of exclusion is established; for, whenever a circumstance of a class is found deficient, the sign of the class being replaced by the sign of the instance in which it is first found deficient, it becomes excluded from the class on the evidence of the instance or instances in which it may be found wanting. After the circumstances have been compared in this way, in all the different instances, and the signs placed accordingly, the whole classification must be corrected at the foot of the table, by substituting for the signs of the circumstances, those signs

* “ Itaque naturæ facienda est prorsus solutio et separatio; non per ignem certe sed per mentem, tanquam per ignem divinum. Est itaque inductionis veræ opus primum (quatenus ad inveniendas formas) rejectio sive exclusio naturarum singularium, quæ non inveniuntur in aliqua instantia, ubi natura data adest. Aut inveniuntur in aliqua instantia ubi natura data abest, aut inveniuntur in aliqua instantia crescere cum natura data decrescat, aut decrescere cum natura data crescat.”

† “ To use the language of Lord Bacon, A is the representative of instances *absentiæ in proximo* of the circumstances designated by B.”

which the circumstances have assumed in the particular instances ; so that those circumstances only which retain the sign of the class, continue to belong to it." 33.

By means of these two forms of tables, which he calls *tabulae inveniendi*, he determines the relations of circumstances to one another ; but as it is not only desirable to ascertain these generally, but so minutely that all their degrees and modifications may be discovered, he places over the sign of any circumstance, under any degree or modification, the sign proper to the instance in which this degree is found ; and

"In order to avoid a confusion of signs, the corresponding letter of the Greek alphabet, may be used instead of the Roman letter. Thus suppose a circumstance A recurs under a modification in the instance D, this will be expressed by $\alpha\delta$. If therefore, the modification of the circumstance $\alpha\delta$ is of sufficient importance to induce any change in any other circumstance with which it may be in relation, there will of course be found other circumstances, in the same instance, with signs of modifications, or there will be some new combination of the signs, or some signs absent or present, out of the usual order. And therefore, where circumstances under the same signs do not, by their signs, express such mutual affections or modifications, they must be excluded from having any constancy of relation affirmed of each other." 37.

This method of induction may be easily extended to almost any number of instances, so that one table, or even a series of tables of signs may be compared with those of another, by reckoning the *number* of signs of each circumstance, or the *number* of times each circumstance recurs in the different instances, and by placing these numbers in figures under the proper signs in the column of classification. This numerical adjustment of the signs to the circumstances the Doctor has called *rectification of the signs*, and is a process of arrangement by which the signs, contained in any number of tables, may be accurately classified.

The Doctor's entire analytical scheme is skeletoned in the following passage.

"I. *The translation of circumstances into signs*, which express not only the presence and absence of circumstances relatively to each other, but also their reciprocal modes and modifications ; and which standing precisely in the position of the circumstances, indicate all the possible relations which can exist between them.

II. *The classification of signs by affirmative circumstances* according to their conjunction in different instances or individual cases, by which those co-existing are classed together, and those not co-existing are excluded and separated from each other.

III. *The extension of this principle to any number of instances by the rectification of the signs*.

IV. *Exclusion of those circumstances from the classes formed by the previous processes which are not found constantly present in the classes* ; 1st, by the *classification by negative circumstances*, and 2dly, by *deficiency of mutual variations and modifications*." And the *Rules for performing the different processes of this scheme* are thus laid down—"I. *Translation of circumstances into signs*. For every circumstance found in any instance, place a sign opposite to it in the column of the instance. If the circumstance has been already found in any previous instance, the sign by which it was first denoted must be repeated, but if not so, the sign of the instance will be the sign of the circumstance. If any circumstance already found in some previous instance, presents itself in

another instance with some variation or modification, the Greek letter corresponding to the Roman letter, the sign of the instance, is to be placed over the sign of the circumstance, and this letter must continue the sign of the same modification in all succeeding instances.

II. *Classification by affirmative circumstances.* When all the circumstances have been translated into signs, according to the preceding rule, the signs of the circumstances are to be carried into the column of classification, each under their respective sign, so that the same signs may stand in the same vertical line; or, the co-efficient of each sign is to be placed in the column of classification instead of the sign.

III. *Rectification of the signs.* The circumstances and the signs by which they are represented in the column of classification, are to be transferred to their appropriate columns in the table of rectification. If a circumstance is represented by the same sign in all the classifications, the sum of its co-efficients is to be placed under that sign in the column of rectification. But if a circumstance be denoted by different signs in the different classifications, it is necessary to find that sign whose co-efficient carries the greatest sum proportionate to the number of instances, and the sum of the co-efficients of all the signs must be placed under that sign in the column of rectification.

IV. *Exclusion.* First, by the classification by negative circumstances, the sign of the instance is to be substituted for the sign of a class wherever any circumstance of a class is found defective; and, second, any circumstance of a class which does not indicate modifications or affections reciprocally with the other circumstances of the class, is to be rejected from the class.

V. The products of the process of induction are to be at last transferred to the table of *Synthesis*, where every circumstance standing under its proper sign, whether of class or sub-class, shows the relations in which they all stand to each other." 57.

Such, then, is the method of induction proposed by our author, with the view of obviating the injurious effects of the present disorderly and unphilosophical spirit of inquiry; and he believes that, if carefully practised, it will be productive of many important advantages—in directing the attention to *all* the attending circumstances of each instance or fact—in attaching the proper degree of attention to *each* attending circumstance—in suffering *nothing*, which may tend to increase our experience, to pass unnoticed—in enabling the mind to dwell upon the consideration of *any number* of circumstances—in reducing observation to the guidance of *definite* rules of admitted accuracy; and, finally, in establishing useful *habits* of close perception and clear arrangement. To facilitate, as much as possible, the application of this plan to the various subjects of inquiry for which it may be adapted, he has drawn out a very minute and elaborate set of tables, suited in construction to the different characters of the materials to be analyzed. This portion of his work he calls the *methodus cantabulandi*; and in the fifth, which is his last chapter, he makes an ingenious application of his tabular analysis to medicine—physiology—phrenology—animal magnetism—chemistry—meteorology—natural history—the evidence of testimony—statistics and political economy.

The reader is now as well prepared to decide upon the value and practicability of Dr. Todd's system as we are, and we cannot but apprehend that he will concur with us in thinking that, however just in its principles and ingenious in its application, it is infinitely too complicated and minute, at least for the purposes of medicine. If we cannot prevail upon eight-tenths of the profession to submit their minds to those pre-requisite ordeals—an

ordinary acquaintance with their native tongue, and an ordinary degree of professional attainment—ordeals so preliminary and so pre-requisite to render this Baconian system of analysis and synthesis at all available—if we cannot persuade them, before entering the lecture-room, to prepare their minds for scientific study, by making themselves moderately familiar with English composition and classical instruction; and if we cannot induce them, before entering upon the awful responsibilities of actual practice, to lay down something like the groundwork of a good professional education, upon which future opportunity and future labour might construct more advanced attainment—we hold it utterly Utopian to hope that any zeal, or talent, or incitements, which we can display, will prevail on them to sit down, with the minds and habits they at present have, to the study of an abstract and complicated series of analytical tables, which it requires a fully matured, and not a very uncultivated intellect even to comprehend. Look at the disciplinary system of the present hour, which qualifies the general practitioner for entering upon the duties of active life. Is it a system, which can be expected for a moment to give to the mind that adequate degree of preparation, which could make the Doctor's inductive system of the slightest value? After standing behind his counter for *half a dozen years*, learning the colors and smells, weights and measures, tastes and prices of his drugs; and after devoting about *twice as many months* to an investigation of their sanative principles, and application to the treatment of disease—to the anatomy, functions and laws of the human frame—to the manifold accidents and diseases, to which it is obnoxious—to the characters of these affections during life and their pathology upon dissection—to midwifery, chemistry and jurisprudence—the candidate for professional honors goes then before his college with confident assurance, passes through the fiery furnace with flaming reputation, purchases a share in some established business, and sets himself down for life, the authorized and accomplished veteran of science! We again ask is this the curriculum, which can make him a philosopher? Is it by such few and hasty strides that he can traverse the distant space, which lies between the infancy of thought and keen, penetrating, inductive reasoning? The truth is, the mind requires no mean degree of cultivation, ere it can become a successful disciple of the Baconian school. Its powers must be expanded by exercise, they must be inured to fatigue, they must be drilled into perfect submission to the judgment, they must be educated to abstract thought, to acute observation, to careful inference. And it is only during the childhood of the mental powers, that all this can be accomplished. It is not during the hurry of an oppressive and anxious occupation; it is not when habits early formed have sealed up the thinking faculties to a certain course of operation, and have disqualified them by long abuse from close and continued induction, that the *novum organon* is to be laid before them. Such minds must travel along their own beaten path in their own accustomed step. We can perplex and confound them, much more easily than either regenerate, or rectify them. We are most agreeably mistaking both the average calibre of their intellects, and the average stock of their attainments, if many more than a half of our professional fraternity will comprehend even the plan, which Dr. Todd recommends them to employ in observation; and if so, what likelihood is there of such a plan being carried by such minds into general operation?

It is to our rising and future generations that we look for medical reform—genuine, fundamental reform—that reform of existing customs, and that improvement in the education of our youth, without which neither our charters nor our colleges, our corporate bodies or anomalous monopolies, can do us either much serious injury, or good. Medicine must be *taught* as a pure, inductive, experimental science, before it can be very generally *practised* as such. It is from our schools and our seminaries that analytical philosophy is to commence its career of medical reform; not from the shop of the druggist, or the chamber of sickness. Let the materials of our professional fabric be fashioned and fitted at the quarry ere they are worked up into the body of our building. It is not when they are grounded in the foundation, or cemented into the superstructure, or placed over us as cornerstones and coverings, that we are to chip and chisel them. All this should be done in the nursery, the grammar-school, the academy and the lecture-room. It is there that the book of analysis must be sent, that its principles must be explained, enforced and inculcated. It is much better adapted to develop the green and growing mind, than that which age has rendered stationary, and custom unchangeable in its habits.

But it still becomes a question with us of no mean interest, how far we should be doing wisely to recommend to the rising generation of medical practitioners all the details of the application of his inductive plan, which the author has thought it prudent to make to the advancement of true medical science. The Doctor admits that "an improved method of the study and, consequently, of the practice of medicine is only to be expected from an improved method of education," and, therefore, to this length we agree; but, in as far as he attaches much more importance to "the method of teaching than to the matter which is taught," we stand very widely at issue.

" My meaning (he observes) will be quite misunderstood, if it is supposed that I imagine, that such an object can in any degree be obtained by the additional studies which have of late years been imposed upon those qualifying themselves for the practice of the healing art, in all its different branches. No doubt such studies may contribute much to the general accomplishment of the physician, and, giving him a more entire view of nature, by enlarging his comprehension, may increase his resources. But these advantages, seldom felt by more than a few individuals happily gifted, are altogether subordinate to the principal object of medical education considered in relation to the many. My notions of the improvement of medical education are in every respect opposed to these alterations, and relate more to the method of teaching, than to the matter which is taught. It seems indeed to me by far more natural that the student should pursue the same course in acquiring the knowledge of his profession in the schools, which he must in after-life follow in his practice, and that the synthetical teaching from the chair should be replaced by analytical observation in the hospital. I cannot help thinking that instead of acquiring a superficial acquaintance of sciences, sometimes remote, generally irrelevant, and which do certainly in many instances tend to establish habits of the mind by no means favourable to the practical details of medicine, it would be a more advantageous employment of the period of study, if the pupil were instructed and exercised in the right use and application of the true method of observation, which in active life must be the guide and the instrument of his professional labours." 119.

No one can deny but metaphysics are indispensable to qualify the

mind for the inductive philosophy. Where the sifting of appearances, the discernment of relations, the weighing of evidence, the discovery of hidden and abstract truth are cultivated and required, it were ludicrous, no doubt, to expect much from a mind that was left ignorant of its own structure, powers and resources. As well might we expect the mechanic to work successfully without his instrument, as the medical philosopher without a mind intimately versed in its own mechanism, and in the most successful methods of applying the agency of its varied faculties to the elucidation of subjects submitted for examination. But it appears to us that, after the mind has been most skilfully educated in the science of itself, as well as in that of strict analytical induction, the task of its tuition has been no more than half accomplished. It must be taught to direct its powers to the most useful objects. The observing principle must be led to the fountain-springs of observation, ere the inductive faculty, be it ever so acute or so capacious, can avail much. A false lesson at this period of its pupillage may absolutely ruin it, or even render it more a curse than a blessing to the interests of science. What avail the expense and splendour of its education, if the matter, which it is taught, be unimportant or, what is worse still, if much that it ought to learn be disparaged or concealed. Now, we cannot exculpate the Doctor from all blame in this respect. The first object unquestionably is, to educate the mind to observe, but the second, and by no means inferior object, is to teach it the most befitting subjects for observation; otherwise its time and talents may be devoted to objects wholly unworthy of them, while others may be neglected which should be understood. We totally disagree, therefore, with the author in supposing that the *matter*, which is taught, is of less importance than the *manner* of teaching it, or that the present system of teaching our youth, what he calls, "additional studies" is in the least degree calculated to retard that improvement, which it is his object to introduce. We do not wish to see any one branch of medical science disparaged. For the accomplished Baconian physician they are *all essentially important*, and most usefully available both to ornament him in society and to prosper him in practice. No doubt, some are of greater moment than others, and to such the mind should be applied with greater earnestness, and where all cannot be attended to, prudence will wisely select the most important; but, in our estimation, there is more danger of our youth being taught too little than too much. The following passages will shew what are some of the "additional studies" alluded to.

" I think it proper to explain that it is not from the cultivation of medicine in specialities and dismembered parts that I augur much good. Indeed I am not aware of any thing which has been more adverse to the diffusion of correct notions, and more opposed to the establishment of truth in medicine, than the division of its study into different branches, thus separating the consideration of the causes of disease from the phenomena which they present, and from the method of treating them." 115.

Again—

" I am therefore not of the number of those who expect that the power of medicine in controlling disease, is to be greatly increased or extended by *curative indications* deduced from the phenomena which the scalpel can disclose. These, at best, can present only a fraction of the data upon which must be founded any deduction for the successful treatment of a disease. If I do not much mistake,

the assistance to be derived from the study of morbid anatomy, can be only indirect, and must be confined to the help it may afford towards individualising diseases, if I may so speak; for by demanding a closer observation of particular cases it may facilitate the application of specific methods of treatment to specific cases." 116.

Again—

" In like manner I have little hopes of the improvement of medicine by the exclusive study of therapeutics. Some physicians would have us think that the power of medicine is to be vastly enlarged by the discovery of specific remedies for particular diseases, or of new agents capable of modifying or removing diseased actions. But the experience of ages forbids us to indulge in these expectations." 117.

On the contrary—

" I am of opinion that the student having been thoroughly disciplined in *classical and mathematical learning*, (*quamvis non faciat medicum, aptiorem tamen medicinam reddit,*) and having been prepared by an *adequate acquaintance* with anatomy, physiology, chemistry, and *materia medica*, should at once proceed to the hospital. It is there, I think, that this knowledge of diseases ought to commence, so that he might know nothing of their symptoms by name, before he has made himself familiar with the reality. The symptoms of disease should be first demonstrated to him on the living subject, after the manner of teaching natural history, and not until he has acquired a distinct notion of them and understood them accurately, ought he to learn the names by which they are technically distinguished.*" 121.

There may be some of these positions, into the truth of which we might, peradventure, be argued; but there are some of them so totally *ultra* to every thing we have been accustomed to think rational, that the great Lord Bacon himself could not seduce us into their belief. Were we to select that "additional study," which tended the most and the soonest to prepare the practical physician to grapple with disease, we should chuse *pathology*; and yet, were it not for one of the above passages, it would scarcely be credited that an observer, so cautious and so circumstantial as the Doctor, never once hints at even the *propriety* of occasionally consulting morbid anatomy in a sketch which he has drawn of an *analytical hospital*, which, by the way, he seems to make the school-room and college, the alpha and omega of a practitioner's curriculum. We have heard some of our grey-haired fraternity, of the old school, grudge and grumble most exceedingly at the expense and labor which are now so generally given to the cultivation of pathology, and we are not prepared to deny that it may not, perhaps, occupy too disproportionately the attention of the present age; but we do think that the Doctor acts most inconsistently with himself, in recommending the rigid system of observation which he has laid down, and thus keeping in the background, if not entirely out of sight, what is very generally considered nearly an entire half of the very field of observation. Symptoms unquestionably

* " Les connaissances qu'on acquiert dans les écoles, ou dans les livres, ne peuvent donner ni cultiver la sagacité des sens:—Les vraies connaissances de notre art ne sont qu'un ensemble, plus ou moins complet, des sensations recueillies au lit des malades; ces sensations ne peuvent être fournies, que par les objets mêmes qui les produisent. Ainsi la lecture, à proprement parler, ne nous enseigne, en quelque sorte, que ce que nous savons déjà.—Cabanis."

must be watched—the living and breathing features of disease must most carefully be studied ; but cases are occurring daily, during the management of which the most lettered symptomatist must feel himself wading in uncharted waters, without a prop to support his *ratio medendi*, beyond loose analogies and ill-defined indications. Separate all we know of practical medicine through the agency of pathology, from that which we have learned by the aid of symptoms, and what an indigested mass of unsettled mixture would medicine be ! The voice of symptoms is often inarticulate when audible, and not unfrequently inaudible when distinct. Besides, it is not symptoms that the intelligent practitioner bleeds and blisters, drugs and struggles with. He sees deeper. He looks through these outward signs to their cause and seat, their rise and relationship. But how is he to do this, without knowing the anatomy and watching the disorganization, which disease has wrought in internal organs in corresponding instances ? And how can he achieve this, without minute, patient and habitual inspection of the dead ? If he despise this internal and hidden light, he must make many a fateful step in utter darkness ; he must cure many a patient by a lucky chance ; and he must lose many a life, without being able to say where lay the disease, what was its precise nature, how far had it advanced, was it certainly beyond the reach of medicine, or by what means might it have been possible to effect its cure. The author's arguments in favour of the inductive philosophy we feel and estimate ; the tabular analysis which he proposes we consider highly ingenious, and if sufficiently practical very highly useful ; but really it is somewhat *outré* to be told that mathematics are more essential to a physician than morbid anatomy ! Simpson's Conic Sections, Bonnycastle's Algebra, and Lardner's Euclid stand a fair chance of pushing Baillie and Bright, Andral and Abercrombie off our shelves ; and the problem of the three bodies, or the asses' bridge, threatens to usurp the rank of universal science !

We are far from wishing to be, or even appear severe. Dr. Todd's book displays too much sound thought and strong judgment, to permit any straggling error to seduce us out of the respect which we owe to a man of talent, labouring in his own way, for the improvement of his profession. But at the same time, it is due both to the profession and to ourselves, as pathological practitioners, and as disagreeing most irreconcilably with the Doctor on this very fundamental point, to show wherein and how far he appears unorthodox : convinced that, however we may wound a favourite crotchet, we must, in all candour, warn our readers against the adoption of such a heresy. We have read Dr. Todd's Book of Analysis with pleasure—we cannot speak in terms too flattering of the spirit which pens, and of the zeal which pervades it—its style is elegant, and occasionally eloquent—the nature of his subject makes him sometimes obscure, and the peculiarities of his system leave him sometimes open to objection ; but, were his enthusiasm for mere symptoms fairly balanced by an ordinary respect for morbid anatomy, we could have nothing, but the complicated minuteness of his analytical tables, to induce us to qualify in any way the very favourable estimate which we entertain of his taste and talents.

III.

RELATION CHIRURGICALE DES ÉVÉNEMENTS DE JUILLET 1830,
A L'HÔPITAL MILITAIRE DU GROS-CAILLOU. Par Hippolyte
Larrey, Chirurgien-sous-Aide-Major. Second Edition; à Paris,
1831.

A SANGUINARY contest of three days, in the heart of a large city, amply provided with extensive hospitals, attended by surgeons of the highest reputation, who were enabled to give up their whole time and attention to the wounded, and to perform the necessary operations under the most advantageous circumstances, is an event in the history of modern military surgery of the highest importance. The military surgeon, in general, has to perform his duties under very different circumstances; he operates on a field of battle, or in a hastily-constructed hospital; his patients probably are subjected to immediate removal on badly-suspended vehicles; or he is obliged to confide their after-treatment to other and less skilful hands; the wounded are among strangers in a foreign land; and the consequent mental depression increases the chances of unfavourable result. But in Paris, in July 1830, the wounded were immediately distributed to the different hospitals which were almost emptied for their reception; the surgeons and assistants were in constant attendance, and the cases were daily watched by them until their termination. Subsequently the principal hospital surgeons have made reports to the Institute of their successes or failures, and a better opportunity perhaps was never offered, of judging of the comparative results of the means employed, from all the patients, as far as relates to attendance and comforts, having had an equal chance of success. M. Dupuytren delivered in his course of clinical lectures a particular and daily account of all the important cases submitted to his care at the Hôtel Dieu, as well as a series of lectures on gun-shot wounds. These will shortly be published by Messrs. Marx and Palliard, under the Baron's immediate inspection. Baron Larrey, the surgeon-in-chief of the Military Hospital of the Ex-royal Guard, (Hôpital Militaire du Gros Caillou,) presented a short report to the Institute of his cases, a few months after the revolution of July; and his son, M. Hippolyte Larrey, one of the most promising young surgeons in Paris, has, in the work which heads this article, extended the report given by his father, and rectified and completed that which was incorrect or imperfect from the haste in which it was written. M. Dupuytren was directed by the Institute to examine the work; and his report bears the most honorable testimony to the zeal, intelligence, and information of the author.

M. H. Larrey was attached as an army surgeon to his father's hospital, and he fully availed himself of the opportunities he possessed of taking accurate notes of all the cases admitted.

Two hundred and sixty-six soldiers of the ex-guard, wounded in the three days, were received into the HÔPITAL DU GROS CAILLOU, of which twelve were afterwards transferred to the civil hospitals, and three to private residences. Of the remainder, four were brought in dead, four dying, twelve died subsequently, and 231 were cured.

The soldiers were not in general wounded, as in battle, by cannon or musket balls; the greater number of wounds were inflicted by slugs; musket-balls were cut into "lingots" to fit fowling-pieces, and, as in the insurrection at Cairo, children's marbles were substituted for bullets, and produced more serious injuries—many wounds were inflicted with small shot. The citizen-soldiers did not employ fire-arms alone; every species of furniture, logs of wood, tiles, and especially paving stones, (each of which weighed at least 50lb.) were hurled from the windows on the heads of the regular troops. The greater number of wounds were produced by fire-arms discharged from a short distance; and they were consequently much more dangerous than those received in battle. The flying surgical carriages (*ambulantes volantes*) which were first employed by Baron Larrey in Buonaparte's first campaign in Italy, and the importance of which is so fully discussed in the "*Mémoires de Chirurgie Militaire*," were stationed near the fighting troops, so that the wounds were simply dressed previous to the soldiers being conveyed to the hospital.

M. H. Larrey has successively described the wounds of the head, chest, abdomen, and limbs, prefacing each division with a general description of the treatment employed by his father. The practice of enlarging gun-shot wounds, except for the purpose of facilitating the extraction of splinters of bone and foreign bodies, or the application of ligatures to bleeding vessels, is, as Dr. Hunter has stated, rarely employed by British army surgeons. John Hunter discountenanced it, as he considered that it tended to increase the inflammation and retard the healing of the wound. The experience of Baron Larrey leads him to a directly contrary conclusion; he directs the enlargement of almost all gun-shot wounds, especially of those which come under the following heads.

1. Superficial wounds with ecchymosis.
2. Superficial wounds with destruction of the integuments.
3. Deep wounds without primitive complication, but which will probably be followed by severe inflammation or nervous irritation.
4. Injury of the nerves, which may be followed by tetanus.
5. Gun-shot wounds tearing away tendons and muscles, followed by inflammatory congestion, nervous symptoms, purulent effusion, sanguineous infiltration, and sphacelus.
6. Wounds with primitive, or consecutive haemorrhages.
7. Wounds complicated with fractures.
8. Wounds containing foreign bodies, such as projectiles, splinters of bones, &c.

In many cases of this kind, a simple enlargement of the wound is much

more safe than rude attempts at the extraction of the foreign body by means of forceps, bullet extractors, or other instruments. The wounds having been enlarged, their edges are to be brought accurately together, and maintained in apposition by dressings; these are to be slightly tonic and compressive. The dressings are simply the unguentum styracis spread on linen pierced with numerous holes, (*linge penéttré,*) charpie, compresses steeped in cold camphorated vinegar, and a roller producing a regular compression. This mode of dressing generally succeeds so well, that subsequent inflammation seldom requires the employment of antiphlogistic remedies; but, in many cases, general bleeding is practised at first, rather as a measure of caution, than of necessity—in some cases, on the contrary, where there is stupor from the violence of the shock, or syncope from haemorrhage, bleeding is entirely contra-indicated. Baron Larrey rarely employs leeches; he has observed, that they favour sanguineous congestion instead of diminishing it, require the removal of the dressings which should be seldom changed, and do not furnish a sufficient quantity of blood unless they are applied in such numbers and so frequently, that the length of the process prevents the dressing of the wound, the necessary operations, and the repose of the patient. Occasionally the bites of the leeches are so deep that small vessels are wounded, the haemorrhage from which is with difficulty arrested. The leech-bites suppurate and ulcerate, and frequently the division of small nervous filaments occasion symptoms attributed to other causes. M. Larrey abstracts blood locally by means of cupping-glasses; instead of the German scarificator employed in this country, and to which he objects from the shortness and depth of its incisions, and the difficulty of directing them, he lightly scarifies the skin with a razor, not penetrating deeper than the cutis, and in a direction parallel to the nervous filaments of the skin. One of the chief peculiarities in his practice is the length of time that he keeps the same dressing applied. In simple wounds he does not renew it until from the 4th to the 8th day; in complicated wounds without fracture, a little sooner; but on the contrary, later in wounds complicated with fractures; in these, as well as in cases of simple fracture, the first dressings are not removed until from the 40th to the 60th day, according to the severity of the fracture. The longer the time the fracture will require to consolidate, the longer are the first dressings to remain applied. The principal advantages of this method are—

1. To avoid the frequent contact of the air with the wounds.
2. To diminish greatly the abundance of the suppuration which is so often attended with unfavourable results.
3. To maintain the parts in a state of apposition.
4. To enable the surgeon to pay greater attention to the rest of the wounded, if their number is considerable, as happened in July, and as is generally the case in the army.
5. To allow the removal of the patient to a distant place without the wound requiring any dressing during the journey.

The efficacy of this treatment of compound fractures, which is so diametrically opposed to that enforced by Pott in this country, and generally adopted by English surgeons, namely, of dressing a compound fracture every 24 hours, is illustrated by two remarkable cases. In one of these, (Case 17,) a musket-ball produced a compound and comminuted fracture of

the upper part of the humerus, splinters of bone were extracted equal in bulk to one inch and a half of the cylinder of the bone, the dressings were not removed until 25 days after the wound had been received, and then only on account of the distressing itching produced by maggots; the wound was found in a healthy state, and the cure was rapid. In the second case the upper part of the thigh-bone, immediately below the trochanter minor, had been fractured into several splinters, many of which were extracted; the apparatus was removed 50 days after the injury to satisfy the curiosity of some foreign surgeons who wished to see the state of the wound, which was found to be in a most favourable condition, (Case 23.) In examining the medical practice of other nations, we do not perhaps take sufficiently into account the differences of constitution produced by the climate, diet, and habits of the people; it is evident that if the treatment which Baron Larrey recommends were adopted in the London hospitals in cases of compound fracture of the limbs of young and healthy men, that it would be followed by severe inflammation, and its worst consequences; but in Paris, where, instead of large quantities of malt liquor, deleteriously drugged spirits, and much animal food, the diet of the poorer classes consists of light acid wines, much vegetable, and but little animal food, and purer and weaker spirits, the chances of inflammation are considerably less, and smaller doses of medicine act with greater power. The pay of the French soldiers is very small, four sous per diem is all that remains after the expenses of the mess, &c are paid; the greater number are thus precluded from indulging in intemperate habits: it will be seen by the subsequent cases that the wounds of the officers, who are not thus circumstanced, were in general followed by more serious inflammation. Some difference also may be attributed to the rigorous attention to diet, so universally prevalent in the hospitals of Paris, and which is owing to the remarkable influence of M. Broussais' doctrines, which attribute to "gastro-enterite" "all the evils which flesh is heir to."

WOUNDS OF THE HEAD.

In lacerated wounds of the scalp Baron Larrey pares the edges, brings them together with adhesive plaster, covers it with linen spread with "ung. styracis," or with charpie or compresses steeped in cold camphorated vinegar, and surrounds the whole with a roller; the dressings are not to be removed before the 6th or 8th day. The bandage must be lightly applied, as considerable compression produces erysipelas of the scalp, and nervous or inflammatory affections of the brain itself, which may require the application of ice to the head, bleeding from the temporal artery or jugular vein, cupping from the nape of the neck, epigastrium, or hypochondrium, cooling drinks, and in a few cases slight purgatives.

Case 1. T.—, brigadier of the ex-guard, was struck on the 28th July with a paving stone on the head, the shock of which was so violent as to throw him from his horse; the helmet had but slightly warded off the violence of the projectile, which had produced a wound on the sinciput, on a level with the sagittal suture, two inches in length; the scalp was destroyed at that part, but no fracture of the denuded cranium could be discovered;

the wound was simply dressed at the time, but the man was not sent into the hospital until the 3d of August. On his admission he was in a lethargic state. The wound began to cicatrize favourably, and he was about to leave the hospital, when on the night of the 6th day he was awoke by a sudden and profuse hæmorrhage. M. H. Larrey removed the dressings, and found that the blood proceeded in a double jet from an angle of the half-cicatrized wound ; he applied a ligature to a small artery of the scalp, and as this did not arrest the bleeding, he applied a compress and roller ; this restrained it until the morning, when it re-commenced on removing the dressings. Baron Larrey then enlarged the wound, tied an artery, and re-applied the dressings ; five days after, (Aug. 14th,) the hæmorrhage recurred with alarming symptoms, such as debility, coma, and erysipelas of the scalp, spreading to the shoulders. The wound was again enlarged by a crucial incision, which, by exposing a larger extent of the cranium, proved that there was no fracture ; the deep arteries of the pericranium were discovered to be the source of the hæmorrhage. The actual cautery was then applied to the bottom of the wound, to its edges, as well as to the whole erysipelatous surface ; this, together with ice on the head, and cupping the epigastrium, cured the erysipelas, but the bleeding occurred a fourth, fifth, and sixth time, whilst the general debility increased. Another application of the red-hot iron, ice on the head, slightly compressive dressings, elevated position, complete rest, and a severe diet, consisting only of cooling drinks, at last effectually prevented the return of the bleeding. The man left the hospital again in September to re-enter the army. We can hardly agree with M. H. Larrey that this is a case which demonstrates "les heureux effets qu'on peut obtenir du cautère actuel" in hæmorrhage ; the bleeding recurred three times after the first application, and the second trial was accompanied by means which, in most cases, are alone found capable of arresting the severe hæmorrhage.

Case 2. P_____, artillery-man of the ex-guard, was wounded near the right ear, July 29th ; two slugs had apparently entered together on a level with the mastoid process, and had passed out, making two holes, one through the antihelix, the other more anteriorly, on a level with the zygoma. The base of the mastoid process was splintered, and the squamous portion of the temporal bone fractured. There were symptoms of violent concussion and compression of the brain. Baron Larrey immediately enlarged the wound, and extracted the splintered fragments of bone ; one of these was the size of the crown of a small trepan ; its removal gave exit to some effused blood, with great relief to the patient ; by placing the finger on the exposed dura mater, the pulsations of the brain could be felt. A seton was passed from one wound to the other, to facilitate the discharge of pus ; simple dressings were applied to the wound—ice to the head. The symptoms of compression were sensibly diminished, but the intellectual faculties were considerably disturbed ; the right ear was deaf ; questions were answered incoherently, and the extremities were benumbed. Cupping on the nape of the neck, between the shoulders, and on the epigastrium—general bleeding, emollient poultices, ice constantly on the head, and cooling drinks, had much alleviated these symptoms, when, on walking across the ward to the water-

closet, September 1st, the patient felt symptoms of apoplexy come on, which speedily terminated his existence.

Examination of the Body 24 Hours after Death. Effusion of bloody pus in the superior longitudinal sinus; rupture of the membranous parietes of the right lateral sinus; injection of the cerebral veins; sero-sanguineous effusion in the lateral ventricles, on the surface of the cerebellum, and in the commencement of the spinal canal. Pleuro-pneumonia of the left side of the chest, with adhesions and effusion. This alteration, which was evidently chronic, had manifested itself since the wound only by slight cough and dyspnoea. The preceding year, the patient had been treated at the hospital for acute pneumonia.

Case 3. The particulars of this case, which was not placed under the care of the military surgeons, were given by M. Magistel. M ——, a lock-smith, believing that he was followed by his companions, rushed alone into the middle of a troop of horse-soldiers. He fell immediately, having received seven or eight sabre-wounds of the head. He was carried into a neighbouring house, and the wounds were dressed. One of the blows had removed a portion of the right parietal bone, two inches in length and one in breadth, so that the dura mater was exposed, the flap of integument was turned downwards over the ear; a second flap, on the superior part of the head, having its base inferiorly, was almost detached from the integuments; a third, extending behind and above the left ear, and laying bare a considerable portion of the cranium, exposed a transverse furrow in the bone, two inches in length and two lines in breadth; the dura mater was exposed, but not injured. The man was agitated, and talked incoherently; his pulse very weak; he drank water frequently, and had one stool. M. Magistel tied a small artery of one of the flaps, removed the splinters of bone from the dura mater and the internal surface of the integuments, united by three points of suture the superior flap, and brought the others together by adhesive plaster. The patient was carried to the Hôpital Beaujon, and placed under the care of M.M. Marjolin and Blandin. Slight inflammation of the brain yielded in a few days to proper treatment, an abundant haemorrhage was with difficulty arrested, and a small collection of pus which formed above the dura mater was evacuated; on the 24th of August he began to take food, and, at the beginning of September, he was removed to the "Maison de Convalescence" at Saint Cloud, a building appointed by the Government for the reception of the convalescent wounded. This patient was introduced at one of the sittings of the Royal Academy of Medicine of Paris.

WOUNDS OF THE FACE.

When they are deep, extensive, and irregular, Baron Larrey enlarges them according to their situation; he pares the edges until they are perfectly linear, and unites them by suture. The loose, extensible, and elastic tissues of the face readily admit the traction of ligatures; from the same causes inflammation is with difficulty excited, and a regular and hardly perceptible cicatrix is the result of an extensive, deep, and deforming wound. The Baron agrees with Dessault in recommending the twisted and quilled

suture, so as to act gradually on the whole thickness of the edges of the wound.

Wounds of the Eyes.—*Case 4.* M. D—, captain of the 50th regiment of foot, lost the sight of the right eye by a small shot penetrating the cornea, iris, and hyaloid membrane, without the evacuation of the humours, or loss of the natural form of the organ. It was followed by slight symptoms of inflammation of the brain, which were cured by moderate antiphlogistic treatment.

Case 5. The left eye of M. J—, lieutenant of the 7th regiment, was entirely disorganized by a gun-shot wound, without any injury of the eyelids. The consequences of the wound were alarming, from an erysipelas, which successively affected the left and right side of the head and the neck. At the commencement, it put on a phlegmonous character, the pain increased, the traumatic fever was constant, with exacerbations on the least excitement, and extreme general anxiety. The patient's life was saved by the application of the actual cautery many times to the whole erysipelatous surface, seconded by antiphlogistics.

Case 6. P—, soldier of the 6th regiment, received a ball in the left orbit, which entirely destroyed the eye, and fractured the external wall of the orbit, without implicating the eyelids; their external angle only was torn, but it cicatrized regularly. No unfavourable symptoms came on.

Fractures of the Maxillary Bones. The most dangerous gun-shot wounds of the face, are the comminuted and compound fractures of the jaws. The treatment employed by Baron Larrey consists in enlarging the angles of the wounds, in extracting the moveable splinters, and, as far as is possible, all foreign bodies, in removing the irregular edges of the wound, or disorganized flaps of integument, in bringing the lips together, and maintaining them in contact by suture, and in applying dressings which are not to be removed before the 8th, 10th, or 12th day.

Case 7. M. M—, captain of the 7th Swiss regiment, aged 56, was struck on the right side of the lower jaw by a mass of iron, thrown from a distance of ten paces. He was immediately carried to the hospital. The aspect of the wound was hideous; the face covered with blood; the mouth extended and strongly retracted downwards, so as to expose the whole extent of the wound. The cheek was torn through its whole thickness, the external jugular vein and many cervical nerves were divided, and nearly the whole of the body of the inferior maxillary bone was fractured in splinters. The poor officer, who was covered with twenty scars, received in the campaigns of Napoleon, was less alarmed than the surgeons. M. Larrey commenced by paring the edges of the wound, and extracting all the moveable splinters of bone, one of which was two inches in length; he then tied a branch of the facial artery, brought together the edges of the wound, and kept them in contact by many points of suture and a bandage. The case went on favourably, the wound beginning to cicatrize by the 15th August. After this period, the cure was delayed by untoward symptoms. Secondary splinters were obliged to be extracted, abscesses to be

opened, points of suture to be renewed, and the actual cautery to be applied for an extensive traumatic erysipelas ; the suppuration was abundant and tedious. Notwithstanding these hindrances, the wound was completely cicatrized by the month of October, and an exact and linear union was the result of the hideous wound. The inferior jaw was reduced in size, from the quantity of splinters of bone removed immediately after the injury, but this loss did not inconvenience the action of the mouth.

Case 8. M——, upwards of 50 years of age, pioneer of the 3d regiment of the ex-guard, was struck, in the morning of the 29th of July, with a ball, which fractured his jaws. The following were the appearances of the wound on his entrance into the hospital immediately after. The ball had perforated the right side of the upper lip, a circular portion of which, equal in size to the projectile, that is, about 14 lines in diameter, had been carried away, but without destroying the edges of the lip ; the posterior half of the upper right maxillary bone and the right angle of the lower jaw were fractured, some branches of the internal and external maxillary arteries, as well as the anterior branches of the first cervical nerves, being at the same time divided. The ball was stopped by, and imbedded in, the mastoid process. The state of stupor and the symptoms of cerebral concussion, together with the appearance of the local injury, were so alarming, that, at first sight, the man appeared almost beyond the resources of art. Baron Larrey, instead of completing the division of the lip, and endeavouring to produce a linear union of the wound, which would have reduced the size of the mouth, and inconvenienced its subsequent motion, lightly removed the inequalities of the edges of the wound, brought together the borders circularly, and maintained them in contact by means of the interrupted suture. He then proceeded to remove the ball and the splintered bone. For this purpose he made an incision through the sterno-cleido-mastoideus muscle, close to its superior attachment, and seized, without difficulty, the ball ; at the same time, many fragments of the maxillary bones were removed—one of them, from the ramus of the lower jaw, was two inches and a half in length ; two vessels were tied. The dressing was not removed before the 7th day, and subsequently as seldom as possible. The cure was effected without any unfavourable symptom.

WOUND OF THE NECK.

Case 9. M——, soldier of the 7th regiment, was struck by a ball discharged immediately behind him. It passed through the thickness of the extensor muscles of the neck, shattered the left tranverse processes of the second and third cervical vertebræ, but without injuring the vertebral artery, and came out between the sterno-cleido-mastoideus muscle, and the cervical vessels and nerves of the same side. Paralysis of the left arm was the consequence, and tetanus was feared. The application of moxas, with cupping between the shoulders, removed these symptoms, and the cure speedily ensued. This was the only wound in the neck received in the Hôpital du Gros Caillou worth recording ; and it is remarkable, from the ball having passed so near to so many important parts without injuring them. The mobility of the vessels of the neck, and the ease with which they yield to

pressure, explain the infrequency of their being wounded, even by cutting instruments, in the most desperate attempts at suicide.

WOUNDS OF THE CHEST.

On referring to the tables of mortality of the different hospitals of Paris, civil as well as military, and to the examinations of bodies brought to the "Morgue," it has been found that the most common as well as the most fatal, wounds are those of the chest. It is remarkable that, out of 15 penetrating wounds of the chest which were brought into the Hôpital du Gros Caillou during "the three days," of which eight were attended with serious symptoms, but one terminated fatally, and that case was complicated with another injury, which required the amputation of the arm at the shoulder-joint. The general treatment employed was the following, which has been found by M. Larrey to be the most effectual.

1. Enlargement of the wounds in proportion to their extent and depth, in order to render them linear and more susceptible of cicatrization, to unload the vessels of the part, to prevent nervous and inflammatory complications, and to facilitate the extraction of foreign bodies.
2. The immediate union of the wounds, to preserve them from the contact of the air, to prevent emphysema, and, as much as possible, the effusion of pus in the thorax.
3. Simple dressings, seldom removed.
4. General bleeding, and local "revulsive" abstraction of blood by cupping, according to circumstances.
5. Very spare diet, elevated position of the chest, absolute rest.

Case 10. M—, soldier of the 1st regiment, was severely wounded by his own musket, which he had just given up to a cowardly opponent. The ball, discharged close to his body, passed through the left shoulder, fractured the clavicle, injured the brachial plexus of nerves, penetrated the chest, and, traversing the lung, came out between the third and fourth ribs, near the posterior border of the scapula of the same side. When brought to the hospital, the man was threatened with immediate suffocation, from effusion of blood into the chest; he was in a state of collapse. M. Larrey enlarged the wounds, and gave issue to some blood; he united them, and endeavoured to produce absorption of the effusion by cupping the whole surface of the chest. By these means the symptoms of suffocation were diminished; but, about the third day, those of effusion increased—the cough and dyspnoea grew more violent; the patient sought relief by lying on the left side, or by sitting up in bed; the wounded side of the chest was evidently dilated; the ribs were elevated and separated from each other; change of position produced within the thorax the shock of a liquid, which was felt by the patient himself. M. Larrey was about to perform the operation for empyema, when a violent fit of coughing produced a copious expectoration of black blood, mixed with sero-purulent fluid. This was attended with great relief, and, by seconding the efforts of Nature, and promoting expectoration, these symptoms disappeared. Owing to the injury of the left brachial plexus, the arm of that side had completely lost its power of motion, whilst its sen-

sibility was greatly increased ; by the repeated application of moxas the motions of the arm were completely restored. He left in October cured.

Seven other cases are detailed in which the chest was penetrated by balls ; the general symptoms were similar to the last, but less severe ; they all terminated favourably, the greater number in 30 or 40 days. In two of the cases the balls apparently remained in the chest ; in one of them it was probably fixed between the arches of two of the ribs, as towards the inferior border of the serratus magnus there was a fixed pain, augmented on pressure. M. H. Larrey remarks, that care should be taken in not deciding too positively in these cases on the lesion of the lungs themselves, as from the well known deviation of balls, the diagnosis should be formed from the nature of the symptoms rather than from the external situation of the wounds ; a ball passing into the cavity of the chest may, instead of following the direct line of impulsion, take the course of the curvature of the ribs, and even pass out at the same side of the chest that it had entered. The general symptoms in all these cases prove satisfactorily that the lungs themselves were wounded.

WOUNDS OF THE ABDOMEN.

In cases of penetrating gun-shot wounds implicating the abdominal parietes alone, M. Larrey recommends the careful enlargement of the wound in the direction of the muscular fibres, and prefers position with a suitable bandage to gastroraphy ; he considers that the stitches of sutures, however near together, do not always prevent herniae, from which succeed, irritation, inflammation, strangulation of the gut, rupture of the integuments which have been sewn, traumatic fever, and sometimes peritonitis, gangrene, and death. He believes that wounds of the intestines are much more susceptible of cure than is generally supposed, and on the principle, that nature in such cases does more than art, he does not attempt to find the wounded gut ; he enlarges the wound, dresses it simply, puts the patient on the spare diet, employs general and local bleeding, oily embrocations over the belly, tepid baths, emollient glysters, cold mucilaginous drinks, and sometimes a mild laxative. He divides the curative process of wounded intestines into four periods. In the first an eschar forms ; in the second it is detached and gives exit to feculent and purulent matter, which continues to escape for a time, longer or shorter according to circumstances ; during the third period this discharge generally diminishes in the same proportion, until it ceases to be poured out externally ; the union of the wound constitutes the fourth period, the corresponding textures coming into contact cicatrize from within outwards ; the primitive adhesions become absorbed, and finally there remains only a slight contraction of the intestinal canal at the wounded part.

Case 2. — B——, soldier of the 1st regiment, received in the left flank a ball, which, passing from before backwards, penetrated beneath the last cartilage of the false ribs, traversed the peritoneal cavity, perforated the sigmoid flexure of the colon, and came out at the lumbar region of the same side. During two days the liquids taken into the stomach flowed with pus through the abdominal wound ; as the purulent matter became more abundant, the escape of the contents of the intestine subsided : this was followed

by an attack of acute peritonitis which yielded to the treatment mentioned above. At the commencement of September the wounds had healed.

Count Belliarde, one of the most distinguished generals in the expedition to Egypt, was wounded in the same manner at the revolt of Cairo, and was treated by Baron Larrey with the same success.

Case 12. B—, soldier of the 6th regiment, was wounded by an iron bar which is used at the Custom Houses to search bales of goods. This was driven into his right flank, and perforated the ascending colon; the lavements and faeces escaped from the wound for nine days. The general and local symptoms were severe, but gave way under antiphlogistic treatment, and the patient left the hospital cured.

Wound of the Bladder. *Case 13.* J—, a Swiss soldier of the 7th regiment, was struck on July 28th by a ball, which entered the right groin and made its exit at the left side of the nates. The direction of the wound, and the immediate symptoms, proved that the bladder and the rectum had been wounded; the urine escaped from the rectum and from the two wounds. Baron Larrey enlarged the wounds, simply dressed them with cerate spread on linen, charpie, compresses, and a bandage, and fixed in the urethra a gum-elastic catheter. For the first few days there were inflammatory symptoms about the abdomen, acute pain, fever, want of sleep, and diarrhoea; general bleeding, oily embrocations over the abdomen, emollient poultices, clysters (half a pint), cooling mucilaginous drinks, perfect rest and suitable position, spare diet, great cleanliness, and, in this case, the frequent renewal of the dressings subdued the inflammation. During the first ten days the urine mixed with pus escaped by the two wounds, as well as by the rectum and urethra, after that time it gradually resumed its natural course. The 29th of August, a month after the receipt of the injury, the flow of urine from the anus was reduced to a simple exudation, and the wounds were almost cicatrized. Baron Larrey, in his report at that time delivered to the Academy, anticipated the ultimate cure of the patient—this, however, was unfortunately not realized. Experiencing slight inconvenience from the constant presence of the catheter the patient removed it, and in endeavouring to replace it himself, he destroyed a small portion of the mucous lining of the urethra at the bulb; the consequences of this was a urinary fistula, and a return of all the general and local inflammatory symptoms; the wounds became deep and livid, the suppuration profuse, the strength of the patient daily more exhausted, a large slough separating laid bare the sacrum, the wounds became gangrenous, and acute peritonitis terminated his life towards the end of October.

Examination of the Body 24 hours after Death. Gangrenous state of the wound in the groin; effusion of urine into the cellular tissue of the pelvis; destruction of about an inch of the middle part of the right side of the bladder, which viscus was much thickened, contracted, and inflamed. The wound of the rectum was not apparent; the posterior wound was partly cicatrized. The bladder contained a few splinters of bone from the fractured os pubis. The peritoneum bore the marks of severe and extensive inflammation.

WOUNDS OF THE EXTREMITIES.

The propriety of *immediate* amputation which has constantly been supported by Baron Larrey, is farther confirmed here. Forty cases of wounds of the extremities were received into the Hôpital du Gros Caillou, and twenty amputations were performed, seven of which were unsuccessful; of these seven, but one was an immediate amputation—the other six were consecutive.

Case 14. D—, a soldier of the 5th regiment, was struck by a ball, which entered near the posterior border of the right scapula, fractured that bone transversely, and passed through the thickness of the deltoid muscle. At first there were no alarming symptoms, the wound appeared simple, and was treated as such; but soon the track of the ball became excessively painful without any apparent cause, suppuration ceased, the edges of the two wounds became pulpy, brownish, and almost dry, deep lancinating pains extended through the breast and back, and were increased on the slightest pressure, with violent spasms of the whole muscular system, and opisthotonus. The tetanic symptoms were well marked before Baron Larrey saw the patient; he divided the wounds extensively, extracted some splinters of the scapula, and took blood largely by cupping; the veins of the arm were opened several times, emollient poultices, baths, fomentations, antispasmodic and opiate drinks, were tried, but in vain; in 20 hours the man died. On examination of the body, the limbs were found to be firmly contracted, and the jaws locked together. The two edges of the irregularly fractured scapulæ were toothed like a saw, many bony splinters were driven into the muscles, the nerves proceeding from the spine to the wound, as well as the ganglions near their origin, were of a deep red colour; effusion of blood had taken place into the whole length of the spinal canal between the two layers of the arachnoid membrane, and the medullary substance of the cord was infiltrated with blood. The brain was not examined. No particular alteration was remarked in the other viscera.

This was the only case of tetanus, occurring from wounds received in July, observed in this hospital; it arose most probably from the irritation of the unremoved spiculae of bone, and M. H. Larrey thinks that it might not have been fatal had his father adopted his revulsive mode of treatment sooner. Baron Larrey relies chiefly on revulsives; he applies moxas and cupping-glasses along the whole course of the spine, makes incisions, and applies the actual cautery to the bottom edges of the wound; he then encourages suppuration from the wound, and cutaneous perspiration by frequent embrocations of hot camphorated oil of camomile. One of the most remarkable proofs of the efficacy of this decisive treatment is given in his “Clinique Chirurgicale;” it is the case of a grenadier of the Imperial Guard of Napoleon, who had the top of his shoulder carried away by a cannon ball, complete opisthotonus came on with surprising rapidity—yet he recovered.

Case 15. L—, corporal of the 6th regiment, was struck by a ball, which passed through the belly of the biceps muscle; the wound went on

favourably ; three weeks afterwards phlegmonous erysipelas commenced in the shoulder, and successively attacked the arm, fore-arm, and hand, without affecting the immediate circumference of the wound ; it was attended with severe symptomatic fever and delirium ; the red-hot iron applied to the whole erysipelatous surface destroyed the inflammation, and the patient was cured.

Case 16. M—, soldier of the 3d regiment, was wounded on the left arm by a ball discharged close to him. It passed from before backwards, fracturing into splinters the whole of the thickness of the os humeri at its upper part as far as its neck ; the artery and nerves were uninjured. Baron Larrey resolved to attempt saving the arm ; he enlarged both wounds considerably, and extracted numerous splinters of bone, the whole of which equalled in bulk one inch and a half of the humerus. The arm was deprived of all strength and power of motion. The wounds were dressed with many compresses steeped in camphorated vinegar ; a single pasteboard splint was applied on the inner side of the arm, and a large triangular pad (the base corresponding to the elbow, and the apex fitting into the axilla, so as to separate the arm from the chest) was secured by a large roller ; the fore-arm was placed in a sling in a state of semi-flexion. This dressing remained on the arm until the 25th day after the receipt of the injury, no nervous nor inflammatory symptom having intervened ; at that time, on account of a troublesome itching about the shoulder, the dressing was removed ; this was found to be occasioned by a multitude of maggots in the wound ; they were removed and compresses dipped in a camphorated liquid were applied to prevent their return. The dressing was carefully re-applied, and, at the end of August, it had been changed but three times ; the arm had then in part regained its strength, and the subsequent dressings were more frequent, and at last daily, until the complete consolidation of the bone and cicatrization of the wound had taken place, which was in October, when the patient left the hospital. The only inconvenience resulting from the injury was a shortening of the bone to the extent of an inch and a few lines, corresponding to the substance of bone removed. This case illustrates most favourably Baron Larrey's peculiar treatment ; in little more than ten weeks a complete cure of a compound comminuted fracture of the humerus, with a loss of one inch and a half of the cylinder of the bone, was effected ; the two wounds were considerably enlarged, and the original dressing was not removed for 25 days after the receipt of the injury, although occurring in the hottest month of the year. M. Larrey has observed, during the campaign in Syria, that the presence of maggots in wounds is rather favourable than injurious ; that they seem greedy of the putrid and gangrenous parts ; thus hastening the separation of sloughs, whilst they avoid the living parts. If this observation be correct, these animals may be regarded as so many artificial absorbents, and we may expect, in process of time, to see the surgeon ordering the application of some hundred maggots, as gravely as he now applies some dozen leeches.

In two cases Baron Larrey removed the arm at the shoulder-joint. His mode of operating is as follows :—The patient is seated on a stool ; an assistant is directed to raise the flaps and to compress the axillary artery at the moment the limb is being completely separated from the body. The

operator commences by making a longitudinal incision from the acromion to a point an inch below the neck of the humerus, thus dividing the deltoid muscle into two equal parts, out of which he makes two flaps, an anterior by cutting from above downwards, and a posterior from within outwards. The assistant raises the flaps, and compresses the divided circumflex arteries; the articulation is thus exposed; the operator by a circular sweep of the knife divides the capsular ligament, he then turns slightly outwards the head of the bone, and as soon as he is satisfied that the axillary vessels are firmly compressed, he separates the limb from the body by carrying his knife backwards and inwards on a level with the inferior angles of the two flaps, and before the fingers of the assistant. The artery is then tied whilst compressed, so that all haemorrhage is prevented.

Case 17. J—, soldier of the 6th regiment, was struck by a ball discharged close to his body, which fractured the right os humeri, and traversed the chest. The upper extremity of the humerus was fractured in splinters an inch from its neck, the ball then penetrated the chest a little above the right mamma, and passed out between the 5th and 6th left ribs, traversing the right lung and anterior mediastinum, fracturing a rib and denuding the pericardium for an extent of half an inch at the apex of the heart, so that the pulsations could be felt through the wound. M. Larrey enlarged the wounds and extracted portions of bone equal in bulk to three inches of the cylinder of the humerus. He dressed it similarly to Case 17, having previously enlarged and dressed the wounds of the chest. Notwithstanding the dangerous nature of the injury there were no severe primitive symptoms. On the third day the suppuration of the arm was so considerable that it had soaked the whole dressing, and an intense itching required its removal. A large quantity of maggots had collected; the suppuration was abundant, unhealthy, and fetid; a sinus had formed extending from the wound to the elbow; as there was no chance of saving the arm it was removed at the shoulder-joint on August 7th, before the wound of the chest had occasioned any alarming symptom. Until the 13th of August every symptom was favourable although the patient was in a very feeble state. On the 13th, from taking cold during the night, the patient had a shivering fit followed by fever and diarrhoea. On the 14th the fever had assumed an adynamic type; the dyspnoea, cough, and sense of suffocation, left no doubt of the existence of effusion into the chest, which speedily terminated his life. On examination, an effusion of a pint and a half of blood was found in the right cavity of the chest, floating in a less considerable quantity of pus; the right lung was torn and remarkably compressed. There were appearances of acute pericarditis, with albuminous effusion on the surface of the heart. The wound produced by the amputation was natural.

Case 18. P—, æt. 21, fusileer of the 7th Swiss regiment, received, on the 29th July, a ball in the left arm, discharged close to his body. There was a simple round wound at the upper third of the arm, on a level with the attachment of the pectoralis major at the inner border of the deltoid muscle; the motions of the arm were free and executed without any pain except at the external wound. It was regarded as so slight an injury that it was not shown to the surgeon-in-chief;—the ball had not passed out. Some time

elapsed without the appearance of any particular symptom, except an acute pain in the wound caused by the slightest pressure and some common inflammatory symptoms; these increasing, Baron Larrey examined the patient; he immediately saw that the wound was not so simple as had been imagined; around it there was considerable inflammatory tension causing great pain and traumatic fever; a deep fluctuation was discovered from matter probably having its seat around the upper extremity of the bone. M. L. enlarged the wound more considerably, which gave issue to much pus; he passed a seton through to favour its further escape, and ordered a general bleeding, spare diet, &c. The suppuration increased, and local suffering with nervous excitement and continued fever; the strength declined, and in short the patient was in a state of imminent danger. On again probing the wound M. Larrey discovered a sort of erosion with loss of substance in a particular point of the os humeri; no doubt remained as to the source of the suppuration or of the course to be pursued. On the 27th August, M. Larrey removed the arm at the articulation, the man, although reduced to a skeleton and in a state of extreme debility, requesting the operation. On the dissection of the limb the muscles were found to be divided by purulent sinuses which had also detached them from the bone. The ball had traversed the whole thickness of the head of the os humeri forming a cylindrical canal of many lines in diameter without any fracture of the bone. The head of the humerus was already denuded of its cartilage. The wound was dressed so as to prevent too immediate union, and it slowly granulated. Some slightly unfavourable constitutional symptoms were subdued by mild remedies. On the 37th day the patient complained of a fixed pain near the infra and spinous fossa, increasing on pressure, with slight distortion of the part. M. Larrey made a deep incision and extracted the ball. From this time granulations proceeded quickly, and at the end of 20 days the cicatrization of the stump was completed. The general health was gradually recovered. This case proves the difficulty in the diagnosis of some gun-shot wounds; it is remarkable from the simple primary appearance of the wound, the delayed attack of the unfavourable symptoms, the success of a consecutive amputation performed under inauspicious circumstances, and the singular injury of the bone by the ball which perforated it without fracturing it.

Four amputations of the arm were performed, and these tend to prove most satisfactorily the success of *immediate* amputation; two of these amputations were primary and successful, the other two were consecutive and fatal. The two primary amputations were for compound fractures of the elbow-joint, and the cases were accomplished without any unfavourable symptoms; of the other two, one was for a compound fracture of the second row of carpal bones, followed by severe phlegmonous erysipelas of the fore-arm, and in the other, a musket-ball was firmly wedged in between the ulna and radius. Several cases of severe gun-shot wounds of the fore-arm, with fracture of one or both bones are reported, none of which required amputation. The following case of wound of the head is of importance from its being followed by a large symptomatic abscess near the anus.

Case 19. M. C——, lieutenant of the 6th Regiment, commanded a detachment posted in a house in the Rue St. Honoré; the position was forced by the people: after receiving several wounds, this officer endeavoured to

save his life by jumping from a window on a roof 20 feet beneath it ; as he fell he received a ball through the right hand ; from being a tall and large man the shock of the fall was so violent that it produced stupor, concussion of the brain, numbness and rigidity of the limbs, especially of the left arm and of the feet. The wounds were immediately dressed ; that of the hand was the only serious injury : it was found that the second metacarpal bone had been fractured, and the flexor tendons and muscles torn ; the wound was enlarged, splinters of bone extracted, and a suitable dressing applied. Two days afterwards he was removed to the hospital ; he was bled from the arm, cupped between the shoulders. At the beginning of September, (the violent symptoms of cerebral concussion not having completely subsided,) a vast abscess formed at the margin of the anus in the substance of the right gluteus muscle, without any known cause, or well-marked local symptom ; there was neither redness nor fluctuation ; the fixed pain and the fever were the only indications. Baron Larrey, convinced of the existence of an abscess, made an incision two inches in depth, from which escaped a considerable quantity of pus ; he then made the incision crucial, and introduced a pledget of charpie to prevent the wound's closing. From this time the unfavourable symptoms gradually abated, and he left the hospital cured.

Wounds of the Thigh. These were numerous, and in general slight; three only were of a serious nature ; two of these were muscular wounds, followed by phlegmonous erysipelas, and they illustrate the formidable treatment adopted by Larrey in this disease.

Case 20. M. de Saint-C——, chief of a battalion of the 1st Régiment, received a wound from a marble discharged from a musket in the right thigh, at its superior third. The wound was enlarged and dressed ; three days after, a painful spot, two inches above the patella, indicated the presence of the marble, which was extracted by a counter opening. The whole limb was attacked with severe erysipelas, threatening to extend to the pelvis ; the upper part of the leg and the knee were in a state of ecchymosis, and the thigh enormously swollen ; the actual cautery was applied over the erysipelatous surface, followed by a compressive bandage ; this produced the best effects, and in the beginning of September the patient left the hospital quite cured.

M. Larrey has found that wounds made by balls of marble are attended with more serious injuries than those occasioned by leaden bullets. He considers that a ball of lead, from its weight, traverses a limb more easily, causing a regular wound without seriously disorganizing the surrounding parts, and that the lightness and elasticity of a ball of marble causes deeper and more irregular wounds with much more extensive disorganization of the soft parts. The case just detailed tends to confirm his opinion. This officer had been frequently wounded in the course of a long military career, and no wound from bullets had ever been attended with such alarming symptoms.

Case 21. R——, soldier of the 50th Regiment was struck with a paving stone on the left thigh, which produced a severe contusion, at the same time

that a ball passed through the limb; there was no fracture of the femur. The injuries were immediately followed by most severe general symptoms; delirium, traumatic fever, and great mental agitation; the whole thigh became affected with severe phlegmonous erysipelas; it was enormously swollen, very painful, and without power of motion. It was feared that the inflammation would extend to the abdomen, and that there was but little chance of saving the man's life. Baron Larrey immediately made two long and deep incisions in the thickness of the thigh, which gave issue to a large quantity of pus, and applied the actual cautery at a white heat to the edges of the wounds and to the whole erysipelatous surface, not sparing a single spot. The unfavourable symptoms were immediately relieved, and they gradually disappeared. The wounds from their extent and depth very slowly cicatrized, and required the most attentive superintendance for many months.

It will be seen from several of the previous cases that Larrey applies the actual cautery to the whole surface of the skin affected with traumatic erysipelas, both simple and phlegmonous. Cases 1, 5, 7, and 15, were those of simple erysipelas of the head, neck and shoulders, and of the thigh. Cases 20 and 21 were of phlegmonous erysipelas of the arm and thigh. The whole of these were severe examples of the disease, and the treatment was successful. In Case 21, where the thigh was attacked with phlegmonous erysipelas, as suppuration had taken place, deep and long incisions were made previous to the application of the actual cautery; M. H. Larrey remarks "on sera peut-être tenté de dire que c'est là une chirurgie effrayante; mais aussi on sera forcé de convenir que c'est une chirurgie positive, une chirurgie qui sauve la vie." The symptoms were indeed formidable, and yielded to the severe means employed; but we find that milder measures frequently are as successful, and as even army surgeons shuddered at the idea of Mr. Lawrence's long incisions, this additional severity is hardly likely to be adopted at all in this country. The argument brought against the practice of incisions was, "are all the principles of surgery now so changed, and is the nature of the human body and constitution so altered, that inflamed parts are to be soothed by maiming and wounding them?" but in these cases, both simple and phlegmonous erysipelas have been cured by a remedy which is often found to produce, not only severe inflammation of the skin itself, but also of the subjacent cellular tissue. How such a remedy acts we cannot perhaps satisfactorily determine; we see, as in cases of erysipelas treated with nitrate of silver, the effects, but are we to deny the utility of the means, because they interfere with our ideas of "the nature of the human body, and the constitution," when the laws especially regulating the changes produced by disease are so imperfectly understood?

Case 22. H—, soldier of the 7th regiment, was wounded by a ball, which, passing through the upper-third of the left thigh, from without inwards, fractured the femur close to the little trochanter without wounding the femoral artery. He was brought into the hospital in a state of stupor. M. Larrey enlarged the wound and extracted numerous portions of bone, one of which was two inches in length. The injury was so severe that it was a question of amputation, but M. L. resolved to endeavour to save the limb, and placed it in his accustomed immovable apparatus. The limb remained confined in this apparatus for fifty days, at the end of that time the dressings

were removed, not from necessity, but to show the limb to some foreign surgeons who wished to see the result of such treatment. The limb was perfectly straight, and there was a shortening equal to the splinters of bone removed. The apparatus was again applied, but unfortunately the patient, without the surgeon's knowledge, was transferred to another ward without due care; the ends of the bone were displaced, and never afterwards regained their straight position. The bone eventually united, but with deformity. M. Larrey generally amputates the thigh after a compound and comminuted fracture of the femur by a gun shot. If an untoward event had not disappointed the just expectations of a complete cure in this case, it would have been one of those rare instances of union without deformity after this form of accident. M. Larrey prefers the circular incision in amputating the thigh; the flap operation should only be employed in those cases in which it is indicated by the disorganization of the soft parts. Of five amputations of the thigh performed in the hospital, two were primitive and successful, the other three were consecutive; one of these was fatal. One of the two primitive amputations was from a gun-shot wound penetrating the joint, the other from a fracture of the inferior third of the femur and of the condyles; the stumps were healed by the first intention. Of the consecutive amputations two were performed successfully for gun-shot wounds of the knee-joint, simple in appearance at first, but subsequently attended with severe symptoms; one limb was removed on the tenth day, the other on the 30th day after the accident; the union of the wounds by the first intention was not attempted; in both cases the cicatrization was long and tedious, and traumatic fever and diarrhœa gave serious apprehensions as to the ultimate success. In the unsuccessful case the ball had lodged in the internal condyle of the femur; the wound, apparently superficial, was attended after some time with such serious local and general symptoms, that the limb was removed 24 days after the injury; death ensued 12 days afterwards. In the year 1818 M. Larrey had removed this patient's right testicle on account of a schirrous affection; on examining the body a marked depression was seen on the right side of the os occipitis, and the corresponding lobe of the cerebellum was less than that of the left side. This remarkably confirms the assertions of Gall on the sympathy between the testicles and cerebellum. The results of amputations of the leg were less favourable than those of the other operations, perhaps owing to the more severe and complicated injuries. Two primitive amputations were performed, one (Case 23) was fatal, the other (Case 24) was successful; there were three consecutive amputations, and but one succeeded; this was a case of compound fracture from gun-shot wound of the foot; the amputation was performed 14 days after the receipt of the wound, and the stump was healed on the 25th day. This was the only case of consecutive amputation which so completely succeeded.

Case 23. Count de P——, æt. 48, of a nervous temperament and spare habit, formerly an aide-de-camp of Demoustier, who by his bravery and military talent had greatly distinguished himself in Spain, Holland, and Prussia, commanded as colonel the third regiment of the royal guard on the 27th of July. Riding before the troops, and consequently being much exposed, he received, on the Boulevards, about 11 o'clock in the morning, two balls in his right leg—his horse was killed under him. The surgeons of the

regiment, who were on the spot, slightly dressed his wounds; but the regiment being surrounded by the populace, without possibility of retreat, were obliged to sustain the combat until the evening; the citizens then gave way, and at the Colonel's own request he was brought to the Hospital of the Guard; owing to many obstructions in their progress they did not arrive there until midnight, twelve hours after the receipt of the injury. Baron Larrey found the whole leg cold and without sensibility. A ball had fractured the outer ankle, and another had torn the anterior tibial artery; and fractured the middle third of the tibia. This extensive injury left no doubt as to the propriety of amputation; but was it prudent to perform it immediately? The state of anxiety of M. de P. who had remained twelve hours wounded without wishing to abandon his soldiers, the shock sustained by the fall of his horse and by the fatigue of his transport to the hospital, determined Baron Larrey to defer the amputation for some hours, in order to calm the agitation of his mind, and if possible to establish the heat and vitality of the leg. A little broth and Bordeaux wine were given, the surface of the body was rubbed with dry flannel, and the limb was warmly covered. At five in the morning M. de P. was calmer, the heat of the limb had slightly returned, but sphacelus had commenced on the foot; after much hesitation on the part of the patient the limb was removed. On account of the extent of the upper wound, and the necessity of removing the limb as far from the seat of gangrene as possible, M. Larrey sawed through the head of the tibia and disarticulated the head of the fibula; from the extreme irritability of the stump, and the stretching which the skin would require in order to cover so large a surface, the edges of the wound were not brought together so as to be united by the first intention. Until the 8th day the symptoms were satisfactory; at that time a slight fever commenced, with symptomatic irritation of the stomach, and anxiety; the aspect of the stump subsequently changed, suppuration was abundant and fetid, attended with the most aggravated symptoms of severe constitutional irritation and cough; the patient became delirious, and died on the 29th of August.

Examination of the Body 24 hours after Death. Effusion of serum into the cranium, injection of the arachnoid membrane, "ramollissement" of the brain, considerable effusion into the chest, adhesions and false membranes, tubercles in the lungs in a state of suppuration, abscess in the liver, inflamed patches in the stomach and intestines. The knee-joint was filled with purulent matter, and the muscles of the inferior third of the thigh were infiltrated with pus, and reduced almost to a state of putridity.

Case 24. M. G. one of the oldest lieutenants of dragoons, was shot in the leg whilst passing with his regiment through the Champs-Elysées. His horse fell with him, his wounded limb being beneath the animal. The shock was tremendous, and the officer was brought into the hospital in a state of complete stupor, and apparently dying. Slight stimulants and warm frictions were employed with good effect. Both bones of the leg had been fractured by two balls at the union of the middle with the superior third of the limb, with disorganization of the soft parts, considerable ecchymosis and inflammatory swelling; the limb was removed as high as possible (as in Case 23) two hours after the receipt of the injury. It was borne with the greatest fortitude; immediate union was attempted; blood was taken from

the arm, and, by cupping, from the hypochondriac and epigastric regions, and the strictest diet was enjoined. The symptoms were favorable until the fourth day, when the knee became red and painful, and the patient grew feverish and delirious. A traumatic erysipelas attacked the whole thigh, and the stump became affected with hospital gangrene; this state was accompanied with stupor and numbness. M. Larrey applied the actual cautery to the erysipelatous surface and to the stump; he abstracted blood by cupping from the epigastric and hypochondriac regions, and applied dry cupping-glasses over the abdomen. This active treatment subdued the erysipelas, and the wound lost the characters of hospital gangrene, but the traumatic fever remained; this was discovered to arise from a large collection of pus beneath the fascia lata of the upper part of the thigh, probably the effect of a contusion; two large incisions were made, a seton was introduced, the wounds healed, and the fever ceased. The subsequent healing of the stump was slow. Incomplete ankylosis of the knee-joint was the only inconvenience that resulted from this very complicated injury.

IV.

AN INAUGURAL DISSERTATION ON CONGENITAL MALFORMATIONS OF THE HEART. By John Paget, M.D. Royal 8vo. pp. 54. Edinburgh, 1831.

It was a wise regulation of the Senatus Academicus of Edinburgh, that left the option of the language to the writer of a medical thesis. Nothing could be more absurd—nothing more disadvantageous to young graduates, than a compulsion to publish their theses in a language which few of their friends could understand—and which very few indeed of their brethren would take the trouble to peruse. Dr. Paget need not, therefore, make an apology “for neglecting a custom, which has only its antiquity to urge in its behalf.”

The subject of congenital malformation has engaged more attention on the Continent than in this country, where our anatomists have generally contented themselves with descriptions of single monstrosities, without relation to any of the important doctrines of physiology, with which they are closely connected. On the Continent they have been more successful, and have elucidated many of the functions of sound and natural structure by imperfections and extravagances, if we may so say, in our organization.

The thesis is divided into three portions; the *first* exhibiting a classification of malformations—the *second* shews the particular malformations themselves—and the *third* delineates the pathological effects, the symptoms, and the treatment. Over the first

part we must pass entirely, and the second part can only be cursorily noticed.

The author commences with malformations of the heart. The ductus arteriosus sometimes remains pervious—as does the foramen ovale. Total absence of the heart (acardia) is a very rare occurrence, and is generally found only in conjunction with absence of the brain, or the upper half of the body. Imperfection in the septum ventriculorum is of pretty frequent occurrence, as is the origin of the aorta from both ventricles. The existence of only one auricle, when the ventricles were double, has been noticed by Haller and others. The valves of the heart and of the great vessels, are subject to malformations and imperfections—more especially the sigmoid valves of the pulmonary artery.

In external form, the heart is rarely much altered, except from chronic disease. Absence of the pericardium is extremely rare, but positively proved by Breschet. We must pass over the malformations of position, which are numerous, and very puzzling as to their cause. Such are the chief congenital malformations hitherto noticed in the anatomy of the heart. We now proceed to a more interesting portion of the work.

PATHOLOGICAL EFFECTS.

" Before entering into the description and theory of symptoms, it may be as well to notice some of the *morbid changes of structure* in the various parts of the heart, which are often found in connexion with congenital malformations; and some circumstances in the history of these changes, which have led to doubts as to the period of their formation. In the nineteen cases collected by M. Louis,* there were ten instances of diminution of the orifice of the pulmonary artery, while it occurred only once in the aorta. Disease of the tricuspid valve is more common than of the mitral; but both are rare. In the cases already quoted, dilatation of the right auricle was observed in 18; five times with hypertrophy, and twice with atrophy of its parietes. The right ventricle was dilated nine times; and in four of these it was also hypertrophied. Simple hypertrophy of the walls of this cavity occurred in six others. On the left side, dilatation of the auricle was seen eight times; of the ventricle, four. Hypertrophy of the former is mentioned in three instances; of the latter, in two only. It must strike every one that these appearances, as hypertrophy, retraction of the orifices by deposition or union of the valves, &c. are so analogous to other independent morbid states of the heart, that there can be little doubt that they must arise from similar causes, and are frequently formed long after birth. They have, however, in other cases been found at so early an age, as to be attributable only to a morbid action pre-

* "Observations suivies de quelques Considérations sur la communication des cavités droites avec les cavités gauches du cœur. Par M. Louis, Arch. Gén. de Med. Tome iii."

vailing during the period of foetal development. To the latter must we refer many of those instances terminating fatally soon after birth; to the former, those which show themselves only at a later period.

This leads me to one of the most extraordinary circumstances in the history of the disease under consideration. Many of the subjects of malformation of the heart have lived for sixteen, twenty, or many more years, without betraying any striking symptom of the presence of such affection; and this has led to a doubt, whether the malformation has existed previously to the occurrence of the train of symptoms by which it is usually known. Most of the cases in which such a doubt is admissible, will be found to consist of simple communication of the cavities, by perforation of their *septa*; and in these instances, we think, the causes of this apparent anomaly may be made sufficiently obvious.

Laennec* conceives that the narrow oblique opening which is often seen between the plates of the valve of the *foramen ovale*, though preventing any admixture of the venous and arterial blood, is often the cause of a more serious affection; since, by a violent blow or sudden effort, it may easily become dilated, and then progressively enlarged. A case related by Corvisart† is generally cited, as most strongly confirmative of this opinion. A postillion, aged 57, who is not said to have shown any previous indications of diseased heart, was attacked with dyspncea, palpitation, &c. after a severe injury from a carriage passing over him, and a violent blow in the epigastrium. He continued for three years to present, with alternate accessions and remissions, the same symptoms; and, after death, exhibited a *foramen ovale* an inch in diameter; dilatation of the right auricle, with dilatation and hypertrophy of the right ventricle. In other cases, the symptoms have first showed themselves after violent fits of coughing; as in *pertussis*, or other pulmonary affections.

The following considerations induce us to believe, that such causes can operate but very seldom, if ever. Cases are known in which the *foramen ovale* has been pervious, or the *septum ventriculorum* imperfect, though no indication of such formation was ever present during life, and the fact itself only discovered after death. The absence of symptoms, therefore, does not entitle us to conclude that congenital malformation may not exist.‡ It is not difficult to account for this seeming anomaly. As long as the circulation remains tranquil—the lungs continue healthy—a free passage exists through the pulmonary artery—and the two sides of the heart maintain their natural proportions;—even though there is an abnormal communication between the two cavities, little blood will pass through it. For we must remember, that the fibres of the heart contract in such a direction as to urge the current of the blood rather in its natural course than to any other channel; and, also, that an equal power (relative to the force required) is exercised on either side, and, therefore, the inclination of the fluid to pass from one side to the

* Laennec on Diseases of the Chest, &c. Translated by Forbes, 1829, p. 630.

† Corvisart, Op. Cit. p. 279.

‡ "Of the former case, I have myself lately seen an instance in the Royal Infirmary of Edinburgh, the subject of which died of icterus. The heart was otherwise quite healthy."

other, is equally opposed. But only let this balance of the circulation be destroyed; let more blood be sent to the right side of the heart by emotion, or exercise; or from disease let congestion take place in the lungs; and the accumulated mass of blood, stimulating the heart to increased action, is driven to seek an outlet where it may, and at once passes through these abnormal openings.

From the augmentation of the *mass* of the fluid, the cavities, especially the auricular, soon become dilated; while by the *increased action*, according to a general law in the development of muscles, increased growth or hypertrophy* is produced.

In opposition to the opinion maintained by some, that the communications between the ventricles are the effect of ulceration or rupture, we may urge, that the edges of the openings are mostly smooth and tendinous, not presenting the thick and rugged surface of ulceration, nor the ragged fibrous appearance of rupture; that they are not preceded by the inflammation, which must be the forerunner of an ulcer, nor is the death so sudden as it would be, if the heart was ruptured.† If we observe, too, the situations in which the openings generally occur, we shall find them at the upper and posterior parts of the interventricular septum, parts which, from their being last formed, are known to be most subject to retardment of development, but which are least likely, for the occurrence of ulceration or rupture.‡ If to these it be added, that in cases which from birth have shown indications of the disease, we find exactly the same appearances, as in those apparently affected only a few months before death, we shall have, I think, sufficient reason to conclude, that these malformations are almost always of congenital origin." 44.

SYMPTOMATOLOGY.

This may be considered in relation to the functions of circulation, respiration, and nutrition. Auscultation has been but very seldom applied to the recognition of cardiac malformation; but it is very probable that the stethoscope will prove a powerful auxiliary in this department of investigation. The congenital contraction of the orifices is indicated by the *bruit de soufflet*.

"The dilatation and hypertrophy of the right side, the symptoms of which are pretty well established, are much more rare than on the left, except when combined with malformations, and will therefore of course help us in our diagnosis. Frequent palpitations on slight exertion, is a symptom very

* "The opinion of Corvisart, that the hypertrophy of the right side depends on the entrance of arterial blood into its cavities, and was caused by its more stimulating qualities, is not tenable. Some would be inclined to attribute it to the effect of inflammation, but we do not see why the heart should not follow the same laws of development as the voluntary muscles; nor do we think there are any facts which contradict it."

† Bertin, *Traité des Maladies du Cœur, &c.* p. 395.

‡ Bertin, p. 394, and Andral, *Anat. Pathol.* T. ii. p. 307.

common in these affections, and on careful inquiry is generally found to have existed from birth, though perhaps little noticed. When the disease has fairly established itself by the morbid formations already described, the patient is liable to severe paroxysms of dyspnoea, during which, palpitations are very apt to occur, though the heart's action may be sufficiently regular at other times. It is subject, however, to great variety in this respect. In one we find 'the action of the heart strong, but felt only at intervals,'* in another so strong as to be seen at a distance,† while in a third it is so weak as scarcely to be perceived. Corvisart‡ in one instance, mentions that 'la main, placée sur la région du cœur, sentait un battement peu régulier, accompagné d'un *bruissement* particulier très-rémarquable.' There was here absence of one of the aortic valves, on which this phenomenon probably depended.

The pulse is scarcely more certain in its indications. When the body is at rest, the pulse is frequently quite natural. During the paroxysm, it is in some intermittent, in others regular; in some strong and full, and again in others almost imperceptible. It is not always synchronous with the heart;§ perhaps irregularity is its most general character. It should be understood, that we do not consider these changes in the circulation to depend on the original malformation, but to arise rather from the subsequent disease of other parts of the heart.

From the congestion, which we have already stated to be one of the effects of these malformations in their later stages, hemorrhages are of frequent occurrence. These mostly proceed from the nose or gums, sometimes from the stomach, intestines, or lungs. It has been noticed in the lungs particularly, when combined with tubercles there.|| These hemorrhages are generally trifling, and not as some have supposed, the immediate cause of death in most instances.

The changes in the state of the brain and mental functions, probably dependent on some alteration in the cerebral circulation, are headache, vertigo, and excessive irritability of temper. Farre¶ includes also, torpor of the brain, epilepsy, apoplexy, paralysis, and syncope. Of these latter, the first may be seen in cases of partial idiocy, but would rather come under the head of nutrition; the three next do not appear to be of frequent occurrence, and are rather coincidences than effects, while the last we are inclined to consider misnamed. Instead of syncope, dependent on an imperfect supply of blood by the arteries, and attended by paleness of the surface, want of action in the heart, &c. &c. it is probably asphyxia, arising, according to Bichat, from the transmission of black blood through the brain. It is certainly attended with most of the appearances usually seen in such cases.

The torpor of the brain is sometimes observed in common with that of other parts of the body, and seems to owe its origin to the defective stimulus afforded by the black blood with which the arteries are filled.

* Dr. Abercromby's Contributions to the Pathology of the Heart, Edin. Med. Chirurg. Trans. Vol. i. p. 59.

† Dr. Hunter, Med. Observ. Vol. vi.

‡ Corvisart, Op. Cit. p. 276.

§ Corvisart, Op. Cit. p. 277.

|| Louis, Arch. Gén. de Méd. Tome iii. p. 331, and Farre, p. 34.

¶ Farre, Op. Cit. p. 33.

Irritability of temper is quoted by Corvisart* in a case from M. Caillot, among others, and appeared to have been present from birth. It is often very strongly marked, and frequently induces the recurrence of the paroxysm.

The palpitations and disturbance to the circulation, in many instances, seem to be influenced by the state of the stomach. In some, the simple distension of the part will explain the impediment offered to the heart's action, but in others, according to Nasse,† it arises from indigestion, and is variously affected according to the nature of the food taken.

The pulsation of the jugulars, though noticed but rarely, is probably a very common symptom, from the frequent occurrence of dilatation of the right auricle." 47.

Perspiration. This is the function which suffers most in this unfortunate class of diseases. The breathing is habitually short and difficult—easily excited by slight exertions, or violent mental emotions—and often terminating in dreadful paroxysms of dyspnœa. The sense of suffocation is then intense—the body is more or less convulsed—the face assumes a dark purple colour, and becomes colder than natural—the eyes are prominent—the face bloated—the jugulars turgid—the respiration deep, with occasional screaming—the decubitus forward or abdominal—death.

"The paroxysms‡ sometimes occur periodically, and are frequently the immediate cause of death. Their duration is very various, from a few minutes to several hours. Patients generally recover from this state with a sigh or yawn, and even when it has been most severe, express themselves much more relieved than before its occurrence.§ How is this symptom to be explained? Mr. C. Bell|| has supposed, that, as during the occurrence of the fit, the patient either leans forward, lies on the belly, presses the breast against something hard, or supports the abdomen with the hands; and as, from assuming the decumbent posture, the fit has been put off; ¶ therefore, this state depends on a want of pure air in the lungs, and this effort is made to contract the cavity of the chest, and expel as much as possible of the impure air. When this is as far as possible accomplished, continues the same author, the sigh or yawn, by which the recovery is preceded, again fills the lungs, and the patient finds himself suddenly relieved. But it is not in the lungs the disturbance first commences, and though first manifested

* Corvisart, Op. Cit. p. 294.

† Reil's Arch. für die Physiol. Vol. x. p. 276.

‡ Duncan's Medical Commentaries.

§ Corvisart, Op. Cit. p. 277.

|| Anatomy and Physiology of the Human Body. (6th Ed.) Vol. ii. p. 72.

¶ 'Any hurry upon his spirits, or brisk motion of his, would generally occasion a fit. And for some of the last years of his life, he has found out, by his own observation, that when the fit was coming upon him he could escape it altogether, or at least take considerably from its violence or duration, by instantly lying down upon the carpet on his left side, and remaining immovably in that position for about ten minutes. I saw the experiment made with success.'—Dr. Hunter in Med. Observ. and Enquiries, Vol. vi. p. 301.

by this organ, it is probably only from sympathy with the brain it is affected. The causes usually exciting the paroxysm, are such as increase the rapidity of the venous circulation, and consequently overload the right side of the heart with blood; which in these malformed hearts is immediately transmitted unchanged to the left side, through the abnormal communication. Hence, the blood passes forward to the brain, and produces complete or partial asphyxia; till at last the circulation again becomes equalized, and a sufficient quantity of oxygenized blood gains the left side, (for some portion still continues to pass through the lungs,) when the organs again receiving their proper stimulus, again resume their natural functions. The peculiar posture is chosen probably, as the upright in ordinary cases of dyspnoea, to allow the more easy passage of the blood from the lungs to the left side of the heart, whereby the former organ is relieved; while the fits have been put off or mitigated by lying on the belly or side, merely, as we believe, because in that position the body is most completely at rest, and the circulation becomes soonest tranquillized." 48.

Two other morbid effects arise from this mixture of black and red blood—the *morbus ceruleus*, and an unnaturally low temperature of the surface. Physiologists are divided about the cause of the blue skin in malformations of the heart. Some affirm that it is owing to the circulation of black or venous blood in the arteries—others, that it results from venous congestion in the capillaries. The arguments on both sides are well handled by our author, and are interesting in themselves.

" It is argued, that *CYANIA* does not depend on the circulation of black blood, because this symptom is not present in all cases of abnormal communication; because it is not peculiar to these cases; because the blue colour is not general; because it is never present, except where there is contraction of the orifices causing congestion;—and lastly, because the colour of the foetus at the birth is not purple.

We have already shown, that these malformations may exist from birth, without allowing this mixture of the two sorts of blood; and therefore it is no argument, that *cyania* does not always accompany them.

That the purple colour of the skin is not peculiar to such affections, is true only to a certain extent. In dilatation of the cavities of the right side of the heart,—in contraction of the orifices of that part,—in hepatization or emphysema of the lungs,—in spasmodic asthma,—or in hooping-cough,—in short, in all diseases impeding the circulation, and respiration, the skin becomes of a darker colour than natural. But it is on the extent to which this prevails, that the importance of the appearance as a diagnostic in this disease depends. The colour is in general much darker than in any simple congestion;* much more universal, much more constant; and frequently

* " I know of only two cases, which seem to contradict this. They are recorded by Dr. Thomson in the 12th Vol. of the Ed. Med. and Surg. Journal. In both the blueness is said to have been general, and in both it apparently arose from suppression of the catamenia, after exposure to cold."

extending to the brain and other viscera. This statement is borne out by the very first case, quoted by M. Louis* himself, and still more so, by another from Caillot;† ‘les téguments de la face, de la poitrine, et des membres, étaient d'un violet tirant sur le noir ; les intestins et les autres viscères abdominaux d'un brun foncé. A peine pouvait on distinguer dans le cerveau le substance corticale de la médullaire.’

The statement, that cyania is only present where there is contraction of the orifices, or dilatation, producing congestion, is contradicted by the case of transposition of the aorta and pulmonary artery already cited from Baillie,‡ where the heart ‘had nothing else remarkable in its structure,’ but where ‘the child had a most unusually livid skin.’

The last argument originating with M. Fouquier, that the foetus which circulates only black blood has not a blue skin, requires some consideration. In the first place, the colour of the foetus at birth, and for some days after, is darker than at a later period ;§ and, 2d, though it has been stated by Bichat,|| and others after him, that the colour of the blood in the umbilical arteries and veins is uniformly dark, yet we are justified in disputing this opinion, great as is the authority, as well from reasons drawn from analogy, as from the positive experience of other authors. In alluding to this subject, Bostock¶ observes, ‘I cannot but feel surprise at such an opinion, as in some cases where I have had an opportunity of examining the foetus immediately after its extraction from the uterus, the different colours of the blood in the funis appeared quite obvious, thus agreeing with the observations of Dr. Jeffray, De Placenta, p. 41.’ To this we may add the still more recent authority of Dr. Holland.** ‘From the kindness of my friend Mr. Carr, surgeon, Sheffield, I have been enabled to prove, by an experiment of the simplest kind, that the umbilical vein circulates arterial blood.’—‘But on taking part of the cord, as soon as the child was born, around which I had previously tied a ligature, about two or three inches from the free extremity, and cutting this with a sharp scalpel, in order to make an even surface, I very clearly discerned, on pressing the cord from below upwards, blood of a very different colour flowing from the umbilical veins and arteries.’

That cyania does depend, then, principally on the circulation of black blood in the arteries we maintain, because, as the colour of any organ is partly derived from the blood it contains, a change in the colour of the

* Arch. Gén. de Méd. t. iii. p. 326.

† Bulletin de la Faculté de Med. Année 1807, p. 21.

‡ Baillie's Morbid Anat. p. 36.

§ “ I have more than once observed, in attending deliveries many years ago, that the foetus had, at first exclusion, a dull dingy colour, but the moment it began to cry lustily, it immediately assumed a vivid red colour.”—ED. of Edin. Med. and Surg. Journ.

|| Bichat, Anat. Gén. 1801, t. ii. p. 343 ; and Magendie's Comp. of Physiol. by Milligan, p. 505, &c. &c.

¶ Bostock's Elementary System of Physiology, vol. ii. p. 199, note.

** The Physiology of the Foetus, Liver, and Spleen. By George Calvert Holland, M.D. London, 1831, p. 154.

blood must affect the colour of the organ ; and because, in these cases, the colour is deeper, more diffused, and more constant than in any other.*

In most of the cases recorded with any degree of care or minuteness, a great sensibility to cold, as well as a diminished temperature of the extremities or surface generally, has been particularly noticed. This symptom is aggravated by cold weather, and during the paroxysm of dyspnœa, while it is relieved by rest, coverings of flannel and the warm bath. Nasse and Farre seem to have been the first who thought of ascertaining by the thermometer to what extent this variation proceeded, and in the small number of cases in which it was tried, were surprised to find the temperature of the internal parts maintaining its usual elevation, while on the external it varied considerably, as much as from 74° to 98° Fahr. It would, therefore, appear, that it was rather a want of power to resist cold, than any diminution in the evolution of heat, on which this symptom depended. We have placed this under the head of lesion of the respiratory function, because it seems pretty certain that the evolution of animal heat is intimately connected with the changes which the blood undergoes in respiration, however difficult or inexplicable this process may be." 52.

The defect of nutrition which we generally observe in malformations of the heart, is probably owing to the abnormal state of the blood itself, rendered unfit for its nutritious office.

We need not dwell on the subject of diagnosis, after the long catalogue of symptoms which have been given. Although these symptoms cannot all be expected in any one case, yet several of them are sure to be found in each.

TREATMENT.

" The treatment of these affections may be discussed in a few words ; it can only be palliative. The chief indications appear to be, to remove any cause exciting the recurrence of a paroxysm, and to relieve it when present. The first indication is best fulfilled by absolute rest ; low diet, but such as contains most nutriment in a small compass, that the stomach may not be distended ; absence of any excitement to the feelings or passions ; diaphoretics ; and the enjoyment of a moderately warm, regulated temperature. The last, by the abdominal decubitus, frictions with flannel, or, still better, the warm bath. To speak of the use of opiates, purgatives, and, in the last stage, diuretics, is unnecessary. Farre† has ingeniously supposed, that the skin in these cases may, to a certain extent, compensate for the imperfect manner in which the respiratory function is performed ; and it is by acting on this surface, he is inclined to think, we must expect to afford the greatest

* " There are three cases on record, (vid. Corvisart, p. 296, Arch. Gén. t. iii. p. 336, and Farre, p. 15) which are exceptions to this remark, for, in these, either the skin was constantly pale, or it was sometimes pale and sometimes purple during the paroxysm. In the first of these cases, the orifice of the pulmonary artery was very much contracted, and it is therefore equally inexplicable on any other supposition hitherto adduced."

† Farre, Op. cit. p. 45.

relief. From the well known sympathy between the liver and lungs, and from the capability of the former organ to take on vicariously the function of the latter, as established by Tiedeman, it is not impossible, that, by stimulating this viscus to increased action, some of the bad effects, resulting from mal-oxygenation of the blood might be prevented.” 54.

We trust that this thesis is only an *avant-courier* of some other and more extended performance. It augurs well for the future *practitioner*, when we find that the *student* has excelled in elementary knowledge and literary research. Judging from the specimen now before us, we would say that Dr. Paget bids fair to distinguish himself as a practical physician, a discerning physiologist, and an elegant writer. *Perge.*

V.

GENERAL REMARKS ON THE HEALTH OF ENGLISH MANUFACTURERS; AND ON THE NEED FOR CONVALESCENT RETREATS, &c. By Mr. John Roberton, of Manchester. Octavo, pp. 36.

MR. ROBERTON’s pamphlet consists of three letters; two of which were published in the Manchester Guardian, while the third, to which the others are introductory, is addressed to the candid and deliberate consideration of his professional brethren—as well as to all those who take an interest in the well-being of that vast and important class of society—the OPERATIVE MANUFACTURERS.

In a late work by Mr. Senior, entitled “Lectures on the Rate of Wages,” the following passage appears:—

“ ‘The Englishman’s industry may sometimes be excessive, his desire to better his condition may sometimes drive him to toils *productive of disease*, ill recompensed by the increase of his wages; but that such is not generally the case, may be proved by comparing the present duration of life in England with its former duration, or with its duration in other countries.’ It is further stated that the average duration of life appears to have much increased within the last fifty years; that the average mortality amongst savages is the greatest that is known; that on the continent the mortality is *one in thirty-four* of the inhabitants yearly; that in England, about a century ago, when more than one-half of the population was agricultural, it was supposed to be *one in thirty*; fifty years ago, *one in forty*; thirty years ago, *one in fifty-four*; and now, when two-thirds of the people are manufacturers, and more than one-third dwell in cities, it is *one in fifty-eight.*” 5.

Mr. Roberton doubts the conclusion to which Mr. S. and other political writers have come; namely, “that the greater or less prevalence of disease in a population must *necessarily* regulate the duration of life—or, in other words, that where the duration of life is on the increase, *there* an increasing diffusion of health may be predicated, and *vice versa.*” We are quite per-

suaed that this conclusion is erroneous, and the reverse is nearer the truth. The vulgar opinion even goes to the length that valetudinarians are proverbially long-lived—and that robust health is far more liable to those acute and dangerous diseases that either snap the thread of life, or lay the foundation for organic changes in the vital organs. Life is, no doubt, shorter among barbarians than among civilized people; but this is evidently not from their being feeble or sickly. Their ignorance of the causes of diseases, as well as of the treatment—their liability to famines and epidemic influences—their ruthless wars—and lastly, the waste of life from abortion, infanticide, and infantile mortality, must be taken into account in the comparative shortness of life among savage nations. Our author is of opinion that, if the matter could be fairly ascertained, it would be found that English manufacturers, although they enjoy a longer life than barbarians; yet that they pass a greater proportion of their time in a state of disorder and suffering. To savages, death generally comes as a sudden stroke, in the form of some acute disease, as fever, dysentery, &c.—or in the shape of war. Few indeed are the subjects of chronic maladies. Their constitutions are good, and they will recover rapidly from wounds which would kill Europeans in a short time. Upon the whole, we may safely conclude that the ruder tribes of mankind, in compensation for want of intellectual enjoyment, possess a considerable and uniform degree of animal vigour—and that, while their days are shorter in number, they are more exempt from bodily suffering than those who compose our great manufacturing communities.

"The hitherto increasing duration of life in England is no disproof of this latter remark. It is to be accounted for, among other causes, by the extraordinary improvements which have taken place in medicine, and all its collateral branches, within the last eighty years; by the gratuitous medical aid now almost universally afforded to the poor, which places them, in this most important particular, on a level with the rich; and, not least, by the increase which has taken place in the means of subsistence—a circumstance that has been singularly favourable to the rearing of healthy children. Indeed, it is probable that the difference which exists in regard to *the duration* of life in this country and among barbarians, is owing, chiefly, to the far greater chance of life in infancy, with us, than with the latter. Moreover, there are various peculiar causes which have tended to lengthen the duration of life in England, without producing a correspondent exemption from disease. A century and a half ago, violent epidemics, such as fluxes, agues, spotted fevers, and small-pox, as well as inflammatory diseases, were far more common than they are now, and incomparably more fatal. In place of these, however, chronic affections, (many of which are compatible with considerable longevity,) originating in the head, chest, abdomen, and pelvis, owing to the artificial life which two-thirds of our population are compelled to lead, have greatly increased; and in thousands of instances, in every considerable town, render existence one long disease."

The number of dispensary patients in Manchester demonstrates that a very large proportion of our operative population is annually on the sick-list. The town in question contains 227,000 inhabitants—and during the year 1830, which was by no means sickly, the home and out patients of the four great general dispensaries, amounted to 22,626—while at least ten thousand more received relief from several other institutions, as the Eye-Infirmiry, Children's Dispensary, &c. &c. If to this immense list we add the private patients prescribed for by the regular faculty—by quacks—by che-

mists, &c. we may be safe in concluding that *three-fourths* of the inhabitants of Manchester are annually necessitated to submit to medical treatment!

The sedentary and other avocations which wholly seclude the artisan, at all seasons, from the open and pure air, unquestionably give rise to derangements of the general health, manifested primarily in the functions of the digestive organs, rendering the mind torpid or irritable. These morbid conditions are aggravated too often by the means adopted to obtain relief—as the drunkenness—the excitement of politics—of riot and uproar—and unhappily of “savage or malignant crime.” Our author is convinced that, numerically, “the middle class does not bear so high a proportion to the lower class as it did half a century ago.”

“ And with regard to the actual condition of the latter, which now composes so overwhelming a proportion of our population, it is, in several respects, in a worse condition than at any period within the last two centuries. At least, I think it might be shown that they are less healthy, according to my definition of health, and more depraved and mal-content than perhaps at any former period.” 15.

Our author observes that the science of political economy appears to refer entirely to wealth, without any eye to the happiness of those who produce it.

“ Judging from much which I see continually occurring around me in society, I should be inclined to say that as the production of wealth is obviously retarded by vice, ignorance, and discontent, and promoted by morality and social happiness, political economy ought to be regarded as essentially a branch of ethics. How greatly, for example, is the productiveness of the labour of a manufacturer lessened, by his spending (as so many of his class do) one or two days weekly in the alehouse! Again, in the numerous, long-continued suspensions of production, occasioned by disputes between masters and their workmen, how much wealth is lost, which a different moral and intellectual condition of the parties would have secured to the country! It would be impertinent were I to enlarge upon this topic in a note: many other illustrations of the truth of my remarks will occur to every one practically conversant with the condition of our manufacturing population. I should suggest, as an improvement on Mr. Senior’s definition of political economy, that it be defined as—*The science which treats of the promotion of the physical and moral welfare of the members of a community, by means of the production and distribution of wealth.*” 16.

Pursuing the subject of his investigation in Letter the second, our author defines health to be “that condition of the body, in which the organic and animal functions are performed *with a feeling of satisfaction*.” We never quarrel much about definitions: but we apprehend that, as far as regards the organic functions, there is no *feeling* of any kind in perfect health. Surely a man ought not to *feel satisfactorily* the circulation of his blood, the digestion and assimilation of his food, the secretion of bile, &c. These operations ought to go on insensibly. We are ready to grant that, in regard to the animal functions, as the exercise of the limbs, the different senses, and the appetites, there is a feeling of great satisfaction when in perfect health—and *vice versa* in disorder. There is, we fear, a very large proportion of our manufacturing population in a condition of health, where the various functions of mind and body are carried on with little feeling of satisfaction, but with much feeling of discomfort.

“ Undoubtedly the hardest part of the operative’s lot consists in his being so

very liable to disease, without at the same time possessing the power of relaxing from his labour. Day after day, the mule or the loom moves the accustomed number of hours, and the full amount of work must be done. There is not, and in the present state of things there cannot be, two grades of labour—one for the whole, and another for the sick. The consequence is, that hundreds of instances of indisposition, which, at the beginning, might soon have been removed by repose and relaxation, become, owing solely to the want of these, confirmed and more and more inveterate, till the stock of vigour is entirely exhausted, and the health ruined; or in such a state as to require months for its re-establishment—an alternative fraught with the utmost pecuniary difficulty in many cases, and the want of proper cordials, nourishment, and the requisite change of air, in nearly all." 21.

These hardships must inevitably press harder upon the artisan than upon any other class—for instance, the agricultural labourer—for obvious reasons. It is, our author remarks, a great misfortune for an operative family to become resident in a densely-peopled community like Manchester, where the working classes are, numerically, to the upper classes, who live within the limits of the town, as ten to one. Hence there are whole districts, in which there is hardly an individual to whose superior habits and manners they can look up to as a proper example—or upon whose more enlightened advice and sympathy they can depend in their domestic exigencies. It is owing to this state of society, that every kind of vice multiplies itself with astonishing rapidity.

" When, in every second or third dwelling, we may find a drunkard, a profane or an obscene person, (and in many districts such characters are even more plentiful than this) who can escape the influence of evil example? When vice is daily (and nightly too) familiar to every eye and ear, what but a miracle can prevent general corruption? *Here* are to be seen early profligacy, contempt of parents, improvident marriages, neglect of religion—even to utter heathenism, insubordination to superiors, the most sluttish waste, dishonesty, general tippling in both sexes, pauperism, gloomy discontent, and the frequent occurrence of disease. These are the circumstances, surrounded by which a well-disposed operative has to encounter the ordinary difficulties of his lot." 23.

What has been said of districts is applicable to large manufactories, where 800 or 1000 operatives are crowded together, and superintended by a single employer. Here there can be no gradation of rank, so useful in society. The master has no bond between him and his labourers. He does not even know their names or faces—has nothing to do with their conduct, except *as manufacturer's*—and, in fine, cannot do otherwise than keep entirely aloof from them:—Hence must originate a condition of mind, in the operatives, at once low, conceited, and insolent—" a very hot-bed for turbulence and crime." Further, we have to deplore the necessity which the operative is under of labouring so many hours daily in bad air, and at an exhausting occupation. After the toils of such a day, how is the sinking and uneducated mind to obtain a comfortable sense of existence—but by means of inebriating liquors? In such a family, all instruction of children and economical domestic arrangements are neglected. Sunday-schools offer a very inefficient remedy! The present state of our great manufacturing population has evidently not improved their health; for the annual mortality at Manchester is 1 in 45, while that of England generally is 1 in 58. We may, however, console ourselves with this reflection, that the annual mortality in Naples,

the finest climate of Italy, is just double that of Manchester, according to the bills of mortality in 1830 !

In the third Letter, our author, disclaiming all attempts to point out moral or political remedies for the evils alluded to, directs his attention to a physical remedy—" the means best calculated to counteract the effects of protracted deviations from health, so prevalent in our population." He confines his remarks and suggestions to the inhabitants of Manchester ; but it is obvious that whatever means of amelioration are applicable to them, will be so to the population of all other great manufacturing towns.

To our author, then, it has appeared, that a great proportion of those patients who apply at the public charities for medical assistance are in a condition to derive little or even no benefit from the most skilful medical treatment. They are labouring under some form of chronic disease, which, in its nature, may or may not be incurable—and, while under treatment, are generally compelled to pursue their ordinary avocations—their residence, in a majority of cases, being a cellar—their food of the worst description. It is hardly necessary to observe, that such patients require *something* besides medicine ! They are more in need of a removal from the influence of those depressing causes, which, if not the sole origin of their complaints, have tended to aggravate and increase them—and a continuance of which must protract, if not baffle, all attempts to cure. The following illustration will apply to more places than Manchester or Birmingham.

" A man I shall suppose, (and I choose a familiar illustration,) of delicate constitution, of sedentary occupation, residing in a confined situation, and who has to provide for a large family, becomes the subject of chronic dyspepsia. Anxiety, unsuitable diet, unremitting labour, combined with the want of even the occasional inhalation of a pure atmosphere, tend to aggravate the disease. He is admitted on a Dispensary. His sallow, desponding countenance, and other prominent symptoms, speedily reveal the nature of his malady. He is forthwith put under the most judicious treatment. For a time he appears to have obtained relief. The alterative has perhaps corrected the vitiated state of the excretions : the prussic acid, or the strychnus, has eased the pain of the stomach ; but these indications of amendment are of short continuance. After a few weeks they are vanished. The medicines are now varied ; and new hope is held out ; but ' the bloom of hope' is gone. The patient returns to his last, his needle, or his loom ; and no less to his cares, long hours, close confinement, and vegetable diet ; and in due time his name appears on the Dispensary Register, as one of the ' Irregular ;' an appellation which has the merit of saving the credit of the physician, by throwing the blame of failure on the patient. In this case it will surely be admitted that *something* besides medicine is wanted." 28.

The following is a striking and true picture of the almost miraculous effects of pure air, change of scene, and temporary change of condition, in ill health.

The mother of a family has a miscarriage, attended with haemorrhage, which leaves her in a state of abject weakness, a prey to a train of nervous symptoms. What is the fate of this poor woman ? She attends at the Dispensary, week after week, with a straw-coloured melancholy visage, a hurried circulation, headache, feeble digestion, swelled ankles, and other indications of debility. The surgeon does his best, but he knows that his patient, notwithstanding her weakness, has daily to undergo the drudgery of doing, single handed, for her family ; that her residence is a cellar, or some other equally unpropitious dwelling in a

confined situation ; that her diet, which ought to be better than common, is the ordinary diet of a poor family, and altogether unsuitable to the sickly appetite of such an invalid. After long-continued, persevering, but fruitless attempts to benefit his patient, the surgeon is fortunate enough, (such fortune, I may remark, is rare,) to obtain for her a Southport-charity ticket, with which she is immediately dispatched to the watering-place of that name, for the prescribed term of three weeks. Here a *total change* in her circumstances takes place. She breathes a pure bracing atmosphere ; has clean airy lodgings ; plenty of wholesome food ; and no other duties to perform than those arising from the care of her person and her daily walks. And what is the effect ? Her appetite and spirits return ; (begin to return perhaps the very day she arrives;) and when, on the expiration of her term, she returns to her surgeon, he finds her perfectly, or nearly, recovered ; and gladly admits that in such forms of disease as this, coupled with the already-mentioned adverse circumstances of a personal kind, a *temporary change of condition*, such as this removal produces, has incomparably more influence in the restoration of health than the most skilful medical treatment has in thrice the time without it." 29.

The author proposes a remedy, as far, at least, as his own town is concerned. It appears that, for a number of years past, there has existed a "stranger's bathing charity" at Southport, supported by a public subscription, and which, though limited in its means, affords relief annually, to a good many poor affected with scrofulous and other complaints supposed to be benefited by sea-air and sea-bathing. The plan which our author proposes is somewhat different from the one in question, and we shall lay it before our readers.

" I propose first, that an Institution be founded, (to be named a Retreat for Convalescents,) in some salubrious, and otherwise eligible situation, at a distance from town, and if possible on the sea-coast, for the reception of such patients of our Medical Charities, as the committees of these Charities may recommend as fit objects.

Secondly, that the convalescents shall be accommodated in a suitable building, to be under the superintendence of a responsible married couple, who shall officiate as governor and matron respectively, of the establishment.

Thirdly, that the expenditure of the Retreat (I am assuming that the buildings, &c. have been erected by public contributions :) shall be sustained by annual subscriptions chiefly, not omitting other means of income : the number of convalescents admitted annually to maintain a strict relation to the income of the current year, whatever that may be.

Fourthly, that the Retreat shall be open for patients, during eight months of the year, namely, from the first of April to the thirty-first of October.

Fifthly, that a regularly qualified apothecary, resident in the neighbourhood, shall be appointed to the Retreat, whose services shall, if possible, be obtained gratis.

From known data, I am warranted in assuming, that a clear income of twelve hundred pounds per annum, would allow of at least one thousand patients spending each three weeks at the Retreat, in the enjoyment of plain wholesome food. And further, that for the accommodation of this number, about fifty beds would be required, with half a dozen spare beds, in case of accidental sickness ; it being understood that no persons labouring under active forms of disease, should on any account find admission." 34.

The author very properly reminds the wealthy inhabitants of these isles of the numerous convalescent retreats, scattered along the coasts and throughout the interior of the country. The whole line, indeed, of the English

coast, is thickly studded with watering-places that have been called into existence for their accommodation; while Bath, Buxton, Cheltenham, Tunbridge Wells, and fifty other great HOUSES OF RECOVERY afford sources of amusement and health to the affluent of these isles. We applaud Mr. Robertson's benevolent designs, and cannot but sincerely approve of his proposals. If the great lords of the creation were to dedicate a portion—even a small portion—of their enormous revenues to the restoration of health among the humble classes of “unwashed artisans,” instead of squandering their fortunes in foreign countries, encouraging Paganinis and other exotic parasites, they would do more good to their country—and perhaps ultimately to themselves, than they now do! But we fear the still small voice of humanity will seldom reach their ears—unless they should be opened, when too late, by the thunder of some national convulsion.

VI.

AN ESSAY ON HEADACHES, AND ON THEIR CURE. By *Walter Vaughan*, M.D. of the Royal College of Physicians in London. Octavo, pp. 252. London, Longman and Co.*

HERE we have a work professedly written on a single symptom;—not indeed a symptom of one but of many diseases; and, if such a practice were to become general, medical books would increase, not in arithmetical but geometrical progression. Undoubtedly every author has a right to chuse his subject, and his manner of illustrating it; yet still he exercises the right at his peril, since eccentricity of design, and singularity of execution always challenge comment, and present little to avert reproof. But from us Dr. Vaughan has nothing to fear; his age entitles him to respect; his anxiety for the improvement of medicine is highly creditable to him; and his minute acquaintance with ancient and modern literature must for ever rank him among respectable and well-educated physicians. We will do him ample justice, and when we cannot praise we will not pain.

To write a book on a symptom, or even symptoms, of one or more diseases, is certainly a novel mode of proceeding, and for which there are but few precedents. It has been well remarked by a recent writer, that the symptoms of a disease do not constitute the disease itself;—they are rather

* The foregoing review was received a long time ago from one of our most esteemed and talented correspondents. We learnt at the time that the author of the work reviewed was labouring at once under mental anguish, bodily affliction, and reverses of fortune! Such being the case, we suspended the publication of the above critique, lest we should add to the wretched author's sufferings. But he is now gone to that land where criticism can never be felt—where flattery cannot soothe, nor censure wound the ear! Judgment may therefore be fairly pronounced on the book, without any injury to its far distant author.—Ed.

an algebraical character designating an unknown quantity, but which, in the hands of a skilful mathematician, may be managed as readily in working a proposition as if such unknown quantity were a sensible object. Let us take the disease, designated pneumonia, for the sake of farther illustration. The leading symptoms are thoracic pain and difficult breathing, while the disease itself is inflammation of the lungs. What would we think of an author, who, laudably anxious to elucidate this, or any other disease exhibiting such indications, should voluntarily write upon these indications in preference to the causes which gave them origin? To such a man we would say, you have forsaken the substance for the shadow; clung to effects and disregarded causes; and, as far as in your power laid, have inverted the natural order of sound observation and philosophical induction:—you resemble a hot-headed enthusiast, who contents himself with recording the phenomena of a diseased organ, when it is in his ability, and demanded by his duty to examine that organ with his own hands, and by his own eyes! Yet this, *mutatis mutandis*, Dr. Vaughan has designedly done, and, as we conceive, for no other apparent purpose than to gratify an eccentric spirit, and to display a comparatively extensive reading. Headachs, headachs are the eternal burthen of his singular, varied, and learned song, while, with all the enthusiasm of a heated imagination, and all the confidence, which a long life ought to create, he partly overlooks, or nearly disregards those great and interesting diseases—diseases which, to explain require the highest intellectual powers. How different is the design of Dr. Vaughan from the recommendation of a recent writer on practical medicine, Dr. Dawson, whose opinions so completely accord with our own, as to induce us to quote his language:—“ Whenever individuals suffer from pain in the head, the attention should be directed to the discovery of its cause. It may be impending apoplexy or palsy; a spiculum of bone irritating or pressing upon the dura mater and other membranes, as well as the brain itself;—or it may be a harmless symptom of a disordered stomach.”*

We will now attempt briefly to explain the nature of this Essay on Headachs: for it is works of a truly practical kind only that we distinguish by analysis; and, whatever may be the merits of this Essay in other respects, it certainly has little pretensions to that species of knowledge. Give us sterling facts, and we receive them thankfully; reason from these philosophically, and we listen with all the ardour of youth; raise an able superstructure on them, and we will cheerfully lend our humble aid; but it would be trifling with that public, which treats our labours so kindly, were we to trespass on its indulgence by loading our pages with long, tedious, and numerous extracts from almost innumerable authors of every age and country. Such is, in truth, the principal part of this Essay, interspersed with casual, and too often inappropriate remarks, which are indicative rather of singularity of opinion than of long experience. As Marc Anthony lost the world for a woman, and as Shakspeare frequently spoiled his finest passages for a paltry quibble, so does this writer sacrifice enlarged views, consistency of argument, and lucid connexion, for the sake of a trite observation, or a stale remark from authors consecrated to fame, because they fortunately

* Dawson's Practice of Physic, p. 289.

lived in an ancient and classic age. There is a time, especially when advanced years have triumphed over the romantic prepossessions of ardent youth, at which men ought to rise above the petty allurements of a name ; and having outlived the gew-gaws of nominal authority they should throw away the rattle, and think for themselves. Far be it from us to depreciate the illustrious dead, we reverence their memory and respect their opinions, but we conceive their works to be the common property of all ; and that he who writes a book should principally draw from his own stores, and not encumber his every page with long, and well known, extracts, like the idle pageants of a triumphal procession.

The Essay is dedicated to the Earl of Darnley, and the dedication informs the world of, what we believe no one questioned, the piety which exists at Cobham Hall. From the preface we learn the writer was perpetual pupil to Dr. Saunders (Lecturer on Medicine at Guy's Hospital) in the year 1784; and, in that preface, he thus explains his objects.

" 1. To remove all ambiguity from the term Headach, by pointing out what is essential to the disease signified by that term, and what is not essential :

2. To show that there is a distinction of Headachs in the nature of things ; and accordingly to make a division of them so perfect as to comprehend them all ; that such errors of judgment as have too often arisen from the confounding of mere pains in the Head with Headachs, and different Headachs one with another, may in future be avoided : and

3. To give an enumeration of the most common occasions, on which Headachs take place ; so as to trace out those principles, resting not on hypotheses, but on facts, upon which, as *data*, all reasoning concerning the nature and cure of any Headach should proceed." x.

This book contains five chapters :—I. Review of Sauvages on Headachs.—II. Definition of Headach.—III. Symptoms of Headach.—IV. Kinds of Headach, with the predisponent and occasional causes.—V. Cure of Headachs. And now the curtain is drawn up, the prologue has been spoken, the audience is impatient, and we retire from the stage at the commencement of the first act of this critical drama, in which Dr. Vaughan plays the only character, and delivers, with becoming gravity and suitable dignity, the following soliloquy.

" As for the division of Headachs into bilious, nervous, spasmodic, gouty, rheumatic, &c. as every one of these epithets contains a hypothesis, which I do not understand, and which I am persuaded, nobody else does, I shall not enter into a formal refutation of it : but I would ask those, who affect to reason so consequentially of a bilious Headach, what they mean by it ? Is it a Headach depending upon a redundancy of bile, or upon an alteration of its qualities ?* If it be, where in the body of a patient must the bile be, to produce a Headach ? Bile, even cystic bile, in the stomach, produces not Headach, but vomiting : an

* "Ou donne le nom de maladies bilieuses aux affections qui dépendant de l'Abondance et quelquefois de l'Alteration des Qualites de la Bile. Nysten's Dictionnaire de Medecine, &c. I cannot help thinking that Dr. Nysten should have followed the French Academy ; and that Dr. Johnson should not have brought forward Spencer to sanction a manifest Error. ' *Abundare pro redundare, supervacaneum, seu superfluum esse perperam ponitur : nam abundare, copiam significat, non superfluitatem : adfert satietatem ; non nauseam.*' Nolten, Lexicon Antibarb."

excess of bile in the intestines produces not Headach, but Diarrhoea : bile in the blood might be supposed to produce a Headach, if pain in the head were a symptom of jaundice. But I do not think it proved, that bile ever enters the blood, either by regurgitating in the hepatic veins, or by absorption from the excretory ducts of the liver ; first, because bile is never found in the lacteals, and never imparts its colour, or its taste to the chyle : secondly, because a jaundice arises sometimes in an instant from anger, in the twinkling of an eye from the bite of a viper, says Cardan ;* therefore, sooner than its regurgitation, or its absorption can take place : thirdly, because one-half of the body, and sometimes only one extremity is jaundiced, which it could scarcely be, if bile were generally diffused in the blood : fourthly, because there is a yellow colour in the white of the eye, in the skin, in the expectoration at the end of peripneumony, and sometimes in scurvy, although there is no disorder of the liver : fifthly, because the skin is yellow after Ecchymoses : sixthly, because the matter discharged by vomiting and purging in cholera, and in yellow fever, is at length ascertained to be not bile, but some part of the blood exhaled and modified in a particular manner : and seventhly, because the serum of the blood, in the jaundice of new-born babes, contains none of the principles of bile. But they, who would know more of this subject, may consult M. M. Breschet, Desmoulins, and Lassaigne. To me it seems plain, that jaundice depends upon the blood itself.

And what is a nervous Headach ? or rather, what Headach is not nervous ? for every disease may, according to the two Professors of Medicine, Whytt and Cullen, be in some sense called nervous. And I would ask, what Headach differs so much from others that the epithet nervous belongs exclusively to it ? I believe that in all Headachs, the nervous system is affected, and the pain is produced, before there is any turgescence of blood-vessels, or any phenomenon cognizable by the senses. It appears to me, that, if the situation of the blood is an object with nature in the commencement of most diseases, there is an antecedent state of the nerves of that situation, upon which the state of blood-vessels depends. Nay, I know no reason, that I should not conclude, that even an apoplexy sometimes kills a patient, before there is any sanguineous congestion in his head." 95.

Dr. Vaughan having finished his soliloquy, and retired altogether from the stage, we venture to re-appear, and to attempt to fill the remainder of this first act. We think the most cursory observer will be struck with the flippant and unphilosophical manner in which he commences. He acknowledges that certain writers have divided "headachs into the bilious, nervous, spasmotic, gouty, and rheumatic," and asserts that "every one of these *epithets* (for he is partial to the language of poetry) contains (an epithet may express something, but how it can contain any thing far exceeds our slender comprehension) a (*an*) hypothesis which he does not understand, and which, he is persuaded, nobody else does;" and, therefore, he "shall not enter into a formal refutation of it." Is this the language of courtesy, or of a sensible enquirer after truth ? Does this author imagine that the opinions and experience of able and observing men are thus to be treated ? If he do, we tell him he is mistaken ; and, while he entertains such sentiments, he will receive only neglect; and, as he well knows, neglect is more painful than censure. When this gentleman affirms he does "not think it proved that bile ever enters the blood, either by regurgitating in the hepatic veins, or by absorption from the excretory ducts of the liver," we are startled, even in this age of medical scepticism, and content ourselves, as in the preceding instance, with making him no reply.

*Morgagni, de Sedibus et Causis Morborum, &c. Epist. lix. § 36.

In expressing the observations on the Essay of Dr. Vaughan, which a sense of public duty has impelled us to make, we are most anxious not to be misunderstood. We object to the plan of it, we object to the mode of execution, and we still more strongly object to its disregard of lucid arrangement, and its obvious want of practical utility; but we have not said, nor do we now intimate, that the performance does him discredit, or diminishes his character as a respectable physician. Indeed the tenor, as well as the spirit, of our observations must have conveyed a very different impression; yet, to avert the possibility of any misconception, we have made this explicit declaration. The Essay will, we believe, be little noticed by the youthful and active members of the profession, but it may be interesting to those advanced in life, and especially to literary men in general, too often severe sufferers from headaches, who are commonly wishful to know the opinions of the ancients and moderns on these afflicting affections. From the favoured pupil of Dr. Saunders,* the happy inmate of Dr. Babington,† and the fortunate friend of Sir Astley Cooper, for such are Dr. Vaughan's high pretensions, accompanied also by an experience of at least forty-two years, better things might have been expected; but it is a melancholy and influential truth, that early advantages do not always lead to great results; that reading is not learning, nor information talents; and even if they were, that learning without analysis is unprofitable, and talents without judgment unavailing. He that is blessed with genius or distinguished by abilities, and remarkable for sound observation and patient investigation, may produce an admirable work, in utter disregard of all learning; just like the bold and adventurous soldier who leads his army into the thickest of the fight, and bravely conquers there, in total defiance of all the received precepts of military tactics. Hannibal led armies on to victory, in complete ignorance of the instructions of that conceited pedant who presumed afterwards to lecture in his presence; while Hunter, another Hannibal in his line, gave to the world productions, that will only perish with the language in which they are written.

VII.

ON HYPERÆMIA. By *M. Andral.*

M. ANDRAL'S work contains a mine of information, research, and deep thought, which the translation of Drs. Townsend and West have laid open to the mere English reader—provided they take the trouble to explore it.

* "Till his death, he continued to shew a warm and lively interest for my success in life, to honour me with his correspondence, and seldom to possess a book, domestic or foreign, which he did not lend me. He sent for me to Enfield after his retirement there. Need I say that I loved and reverenced him as a father?"—*Preface, page 9.*

† "With whom, in the early part of my life, I had the good fortune to be an inmate, and to whom I am indebted for much that I know."—*Page 163.*

But we are sorry to say that light reading and medical politics occupy so many of the leisure hours of medical men in this country, that only a very small proportion of them "drink deep" at the fountain-head of knowledge. If an easy or a quackish mode of treating any important disease, as, for example, fever, be proclaimed, every one hastens to devour the discovery, and take a note of the remedy. But if a deep and laborious investigation into the nature and causes of the malady be advertised, very few indeed will bestow the time or the expense necessary for its perusal. Too many appear to act under the impression, that every study, except of *curing* a complaint, is useless labour; forgetting, or rather not knowing, that we cannot learn the cure, without first learning to discriminate the disease. Almost every malady has its stages and varieties, demanding nearly opposite modes of treatment; though the quack and the routinist hold out but one process for all! Notwithstanding these discouraging circumstances, we shall lay a full analysis of the most interesting articles in M. Andral's work before our readers, hoping that a great many of them will be induced to peruse both the abstracts and the original.

The portion which we select for this article is HYPERÆMIA, occupying the first chapter in "lesions of the circulation." M. A. defines this state to be, "a preternatural accumulation of blood in the capillary vessels." This general condition he subdivides into the four following species, viz. 1, Active or *sthenic* hyperæmia, produced by irritation:—2, Passive or *asthenic* hyperæmia, resulting from diminished tone in the capillary system:—3, *Mechanical*, from obstacle to the venous circulation:—4, *Cadaveric*, or *post mortem*.

I. ACTIVE, OR STHENIC HYPERÆMIA.

Some local congestions, our author observes, are compatible with a healthy state of the system; as exemplified by blushing under mental emotion, and redness of the surface under corporeal exertion. But some others approach nearly to a state of disease; when, for example, the skin becomes red and congested from exposure to too high a temperature, or to irritating substances. Slight congestions thus induced, do not interfere with the functions of the parts or of the general system; but if the excitation be great, or long continued, a true pathological condition is gradually formed, attended with pain and functional derangement, calling various morbid sympathies into action. No line of demarcation can be drawn between these affections. They slide into one another by imperceptible steps and gradations.

"The formation of active congestions by no means infers an excessive proportion of the general mass of blood circulating in the system. On the contrary, morbid anatomy has clearly proved that active hyperæmia occurs as frequently in debilitated individuals, whose blood is neither abundant in quantity, nor rich in quality, as it does in persons of the most plethoric temperament; the only apparent difference consisting in the local and general symptoms attendant on those congestions. The same remark is applicable to the influence of age; with this difference, however, that, at different periods of life, the seat of the hyperæmia varies, as well as the symptoms by which it is attended, but at all ages, the frequency of the formation of active congestions is nearly equal.

When a hyperæmia is formed in any one organ, it has a remarkable tendency to extend and establish itself in other parts of the system; for they are all closely

and intimately connected. The capillary system, when deranged in any one point, is liable to become generally disordered, in which case it presents one of two phenomena : either the original congestion is propagated to other parts, or, at the same time that one or more organs are in a state of hyperæmia, some other parts of the body (by virtue of a species of compensation established between the circulating forces of the capillary system) receive less blood than natural, and fall into a state of temporary, or even permanent anæmia. Thus when the mucous membrane of the stomach is affected with hyperæmia, the cutaneous surface is sometimes minutely injected, while in other cases it is discoloured, and in others again, pale as death : the brain and its investing membranes may likewise, in one case, present unequivocal marks of violent congestion, and in another be found almost exsanguineous, and decidedly paler than natural.

These pathological observations afford satisfactory explanations of several morbid phenomena. Thus, for instance, they enable us to understand how the delirium, convulsions, and other nervous disorders, so frequently supervening during attacks of acute gastro-enteritis, are in some cases produced by the repetition in the cerebro-spinal system, of the congestion originally formed in the mucous membrane of the intestinal canal ; whilst in others, the same symptoms depend on the exsanguineous state of the nervous system, resulting from the circumstance of the blood's accumulation in the organ originally congested.

When a hyperæmia is formed in any part of the system, if any one organ be at the time in a state of disease, or have previously been so, it is that organ which the hyperæmia has the greatest disposition to affect secondarily ; hence it is, that when, from any cause whatever, a local congestion is formed in any part of the body, we observe as secondary phenomena, palpitations, dyspnoea, haemoptysis, gastric symptoms, haematuria, or menorrhagia ; according as the heart, lungs, stomach, kidneys, or uterus, are, or have been, diseased, and thus rendered more susceptible of secondary hyperæmia." 19.

When previous disease has not predisposed some particular organ to secondary hyperæmia, there is generally a determinate order in the disposition of organs to be thus secondarily affected. The brain and spinal cord appear to be most disposed to sympathetic congestions—then the alimentary canal—the lungs—the heart—and lastly the skin. Much modification and variety, however, will be found, according to individual constitution, &c.

When the primary hyperæmia is rapidly developed, those secondarily formed are generally acute also ; and from the rapidity of their formation, or the number of parts affected simultaneously, they often produce as urgent and threatening symptoms as could result from much more serious organic diseases.

" Thus, the violent dyspnoea, almost threatening instant suffocation, which not unfrequently supervenes in an acute attack of gastro-enteritis, often leaves no other trace of organic derangement, than a slight sanguineous congestion of the pulmonary tissue, insufficient to prevent the access of air ; in like manner, notwithstanding the host of nervous symptoms, which complicate the progress of almost every attack of acute inflammation, the body frequently presents, on examination after death, no morbid appearance except a slight congestion of the vessels of the brain, so slight indeed, that it may in some cases fairly be questioned, whether this congestion be really the cause of the great derangement of the cerebral functions, or whether it be not rather an effect resulting from the deranged action of the nervous system, especially as all those nervous symptoms are sometimes observed when no such congestion can be discovered." 21.

The secondary hyperæmias may, from their commencement, assume the

chronic character of the original hyperæmia, and, whilst their progress is slow, and their symptoms insidious, their effects may be equally fatal.

" Sometimes, after having long continued stationary in their chronic form, they suddenly burst forth with all the violence of an acute and newly-formed disease; in other cases, during the progress of the chronic affection, a new and acute hyperæmia seizes on an organ which till then had remained free from disease.

This supervention of acute hyperæmia is one of the most frequent causes of the sudden deaths which occur during the progress of various chronic affections; the lungs and alimentary canal are the parts most liable, in chronic affections, to both these species of hyperæmia, namely, aggravation of the chronic, and the supervention of the acute form." 22.

When the secondary hyperæmia is formed, the primary one is either unaffected—exasperated—or mitigated. The last is the least common.

" When a patient has lost a large quantity of blood in a short space of time; when, during convalescence from a tedious illness, he has been long kept on low diet; or when, after an attack of acute inflammation, he continues to labour under the disease in a chronic form; whenever, in short, the system has been much exhausted without adequate means being taken to recruit its losses, it frequently happens that the sensibility of the nervous system to impressions is increased, in the same proportion as the muscular strength and quantity of blood are diminished. Under such circumstances, a hyperæmia attended with the least degree of pain, may excite the most alarming derangement in the functions of the nervous system. I have seen, in a case of this kind, the bite of a single leech produce symptoms of tetanus; it is scarcely necessary to add, that the application of more powerful irritants, such as cupping-glasses, blisters, or sinapisms, is still more decidedly contraindicated in such cases. To this MORBID SENSIBILITY of the nervous system must be attributed the injurious effects so frequently observed to follow the application of revulsives to persons debilitated by copious venesection or protracted abstinence from nutritious diet; not that the hyperæmia attended with more or less pain, that is produced by the revulsives, directly aggravates the original hyperæmia, but that it produces a violent effect upon the nervous system, which in its turn, reacts upon the primary disease, and thus aggravates those symptoms which it was intended to relieve.

This exquisite sensibility of the nervous system is not exclusively confined to persons labouring under chronic disease, or reduced by tedious convalescence; there are some individuals in whom this state of the nervous system is constitutional: they are generally persons of a delicate frame, and whose muscular system is imperfectly developed. In such cases, all our attempts to remove local congestions by abstraction of blood, only give an increased predominance to the nervous symptoms, the repetition of the blood-letting serving but to increase the convulsions, coma, delirium, &c." 24.

If the above be true, the local congestion should not engross the whole of our attention; and hence the importance of studying the various modifications dependent on constitutional idiosyncrasy, as far as the nervous system is concerned. This system is liable to be primarily affected; and when deranged in its functions and in the influence which it exerts over the other systems, it may and does, in its turn, produce in them either temporary or permanent congestions, thus laying the foundation of every species of organic disease. In this way, an affection at first purely nervous, may be subsequently transformed into a hyperæmia, and finally produce an extensive alteration in the organization of the part—changes, however, which are not

always or uniformly characterized by a corresponding alteration in the symptoms.

When several hyperæmias are formed simultaneously in different organs, they are sometimes produced by one another—but sometimes they are quite independent, though owing to one and the same cause.

" Thus, in measles and scarlatina, two congestions uniformly exist together; one, on the cutaneous surface, the other, in certain portions of the mucous membrane. It would be absurd to say that, in these diseases, the cutaneous produced the mucous hyperæmia, or *nice versa*: they are both necessary effects of one and the same cause; the manifestation, as it were, of the morbid state of the system produced by the introduction of the contagious poison.

This co-existence of several hyperæmias appears to be one of the most constant effects of the introduction of any deleterious principle into the circulation. It is constantly observed in all contagious and infectious diseases, termed typhoid, or pestilential; and likewise in animals that have been made to swallow poisons susceptible of absorption, or when putrid substances have been injected into their veins. The poison, when conveyed into the circulation and mixed with the blood, produces three grand effects, which may either exist singly or in combination. 1. It alters the blood itself, and renders it to a greater or less extent unfitted to support the nutrition and life of the different organs. 2. It modifies the functions of the nervous centres. 3. It produces irritation, alteration of nutrition, and hyperæmia, of the organs to which it is distributed in its vehicle, the blood. This last effect is however the least constant of the three, and great functional derangement may be produced independently of it. Hence it follows, that if we would form a correct and precise idea of the nature and treatment of those diseases which are produced by miasma or other poisons, we must consider the hyperæmia formed in the mucous membrane of the intestines, or elsewhere, as simply one of the elementary ingredients of these diseases; an ingredient which may be absent and yet the disease be neither less rapid in its progress, nor fatal in its termination on that account." 27.

Sometimes a hyperæmia exists for a considerable period in an organ, without producing any alteration in its nutrition or secretions, except perhaps some increase or diminution in their quantity. In other cases, the organs which have been the seat of hyperæmia, undergo various alterations in their nutrition and secretion.

" Congestions of different degrees of intensity and duration occasionally assume an intermittent type, and recur, at longer or shorter intervals, in the immediate vicinity or in the substance of a tissue which has already undergone some chronic alteration in its structure and organization. The recurrence of those attacks of hyperæmia often renders evident the existence of organic lesions, which, during the absence of the sanguineous congestion, were either wholly latent, or only revealed by the most obscure and equivocal symptoms; every return of the hyperæmia in such cases invariably aggravates the organic disease, and accelerates its progress. The knowledge of this fact explains the utility of blood-letting in such circumstances; the effects of the newly-formed hyperæmia are thereby diminished, and although the original organic disease be not removed, or even diminished, it is relieved from the acute symptoms induced by the supervention of the hyperæmia, and is thus brought back to its original stationary condition." 31.

We must not, however, suppose that local congestions can be uniformly removed by blood-letting. A hyperæmia may exist singly and independent of any organic alteration; and yet refuse to yield to local or general deple-

tion. By these depletions the congested organ is relieved of a part of its superabundant fluid; but by such means we cannot remove the unknown cause by which the hyperæmia was originally developed. If this exciting cause of congestion—this thorn of Van Helmont—be powerful in its action, we may drain away the vital fluid, yet the last drop of blood in the body will, in despite of all our bleedings, obey the summons of the irritating cause, and rush to the part affected.

" The modern Italian school has fully recognized the truth of this principle. Convinced of the inefficacy of blood-letting for the removal of the primary cause of congestions, it has endeavoured to discover remedies capable of directly combating this cause. How far the *contra-stimulant* medicines really fulfil this indication, it is neither consistent with the object of this treatise, nor important for our present purpose, to determine; my only object being to establish the primary indication, which should present itself to our consideration whenever the hyperæmia does not depend on a simple irritating cause, externally applied. This indication, I repeat it, consists in combating the cause by which the congestion was produced. Experience alone will enable us to decide whether this indication can be accomplished. We may however remark, as connected with this subject, that observation has already led us to discover, in cinchona, a remedy eminently adapted to prevent the recurrence of intermitting hyperæmias; and that the writings of Tommassini, and his followers, contain many strong facts in favour of the contra-stimulant doctrine; facts which we are by no means entitled to reject, because we cannot reconcile them with our preconceived ideas, and which must eventually be decided by the test of experience, and not by their conformity with any particular theory. These observations may serve to prove that all our therapeutical indications cannot be derived from morbid anatomy, and that in many important questions connected with this subject, no information whatever is to be derived from that source." 33.

The phenomena of hyperæmia, our author thinks, both in the healthy and morbid states, prove uncontestedly that the blood in the capillary vessels is withdrawn from under the influence of the heart, and that its movements and local determinations are regulated by forces inherent in the capillaries themselves. The nervous system modifies the action of these forces, as is observed in the act of blushing. Our author next adverts to various experiments on the state of the circulation in inflammation. In the first degree of hyperæmia, he contends that the vessels are in a state of contraction, and the circulation accelerated. In the second degree, which succeeds to the first, the vessels dilate—the blood circulates more slowly—its particles tend to coalesce—and the whole mass seems disposed to coagulate. From the condensation and unusual accumulation of the blood, the part affected assumes a deep red colour, which subsequently changes to a brown shade, as the circulation of the part becomes more completely suspended. In the third and last degree of hyperæmia, the blood becomes perfectly stagnant, and the seat of the hyperæmia assumes a yet deeper shade of brown, and finally becomes quite black.

" Let us now endeavour to investigate the nature of those forces under the influence of which the capillary vessels, that were at first contracted, become subsequently dilated. Does the force by which the blood is impelled from all parts towards the seat of irritation, contrary to its natural course and the laws of gravity, reside in the blood itself? Is the dilatation of the vessels a passive result of the mechanical distention which they undergo from the unusual afflux

and accumulation of blood? or does it rather proceed from the diminished elasticity of their parieties, resulting from some alteration in their texture? or, lastly, does it arise from an expansive force residing in the coats of the vessels; a force analogous to that which appears to exist in the parieties of the heart (whose dilatation is decidedly not a passive phenomenon) and in the erectile tissues?

The analogy is perhaps stronger than might at first be expected, between the phenomena which occur in an organ affected with active hyperæmia, and those which take place in a tissue in a state of erection. One material difference may however be noticed, namely, that in the erectile tissue the parts are naturally so constructed, and disposed, as to admit of a sudden accumulation of blood under the influence of certain physiological conditions; whereas the natural texture of an organ not erectile must first undergo some modification, before it is capable of receiving and retaining more blood than it is ordinarily supplied with; hence arise various derangements of function in the organ congested, and alterations in its nutrition, secretion, and sympathetic relations with other organs.

As these considerations are not so much matters of fact as of speculation, I shall not urge them further at present, and shall conclude this part of my subject with the observation, that even if all hyperæmias are identical at their commencement, if they all uniformly consist in an unusual afflux of blood towards some point, accompanied by contraction of the vessels, and increased rapidity in the local circulation; if, I say, in this first stage of their existence, they are simply the phenomena of the healthy condition of the part in a state of exaggeration, a second period sooner or later succeeds, in which the phenomena can no longer be considered as such; at this period commences the development of the different alterations of texture, and of the various morbid secretions, which we cannot at all conceive to be produced by the simple augmentation of organic action." 44.

Hyperæmia, instead of being confined to one or more organs, sometimes exists in every organ in the body. The general capillary system is then overloaded with blood, and the whole body is in a state of plethora. The essential character of this state appears to consist in the formation of more blood than is necessary for nutrition and secretion. This superabundance of blood becomes a permanent source of excitation to the solids, while the vital fluid itself has a tendency to accumulate in different organs, forming local congestions of various degrees of intensity.

" Under the influence of this state of general hyperæmia, serous effusions unattended with pain or other symptoms of inflammation, take place into the cellular tissue and into the different cavities lined with serous membranes, especially the abdomen. It appears to me highly probable that these dropsical effusions which are generally denominated *active*, are simply the mechanical result of the over-distention of the vessels, which allow the serous portion of the fluid by which they are over-distended, to transude through the parieties of their capillary ramifications. In confirmation of this view of the subject, I may cite the observation, that if a large quantity of water be injected into the veins of an animal, without having first withdrawn blood from his system, serous effusions are quickly formed; whereas, if the mass of blood be diminished by venesection before the water be injected, that fluid is gradually and almost imperceptibly eliminated. Besides we know from actual experience, that those dropsies usually termed *active*, which are combined with a state of general hyperæmia of the system, are constantly relieved, and not unfrequently altogether removed, by the use of the lancet." 47.

In these cases of universal hyperæmia, where the whole system is over-

excited by the excessive supply of blood, the sympathies which associate the different organs, are rendered more active, and inordinate re-action ensues. The functions of the nervous system are disordered—the temperature of the surface elevated—the different secretions variously modified—the pulse augmented in strength and frequency—and, in short, all the phenomena of fever developed. This fever may be ephemeral, or it may continue for many days. It may run a course, as simple continued fever; or, the intensity of re-action among the different organs may give rise to alarming symptoms, and various nervous phenomena, with prostration of strength, and false adynamia. Or, lastly, some one organ may become more especially affected, and the disease, which was universal in its commencement, is converted into a local affection.

"The morbid state which I have now described, and to which may be referred some of the species of continued fever described by the older nosologists, may terminate in recovery or death. When the termination is favourable, the symptoms gradually improve, as the superabundant quantity of blood, the original source of all the accidents, is diminished by abstinence and blood-letting. When death ensues, the *post-mortem* examination generally exhibits traces of a well-marked inflammation of one or more organs; this inflammation seems to have taken place subsequently to the commencement of the febrile paroxysm, at least the symptoms would lead us to this conclusion. But on other occasions no trace of inflammation can be discovered, and the only morbid appearance consists in a simple accumulation of blood in the capillaries of different organs, their texture remaining perfectly unaltered. These slight congestions, affecting simultaneously several organs, may, by the various morbid sympathies which they excite, produce as violent and formidable symptoms as the most serious organic lesion of any individual organ. In such cases where are we to assign the origin of the disease? Wherever the blood is distributed, there derangement of function is found. In the blood, then, indisputably resides the first cause of the disease; the lesion of the solids is only a secondary affection, but may notwithstanding become, during the progress of the disease, the predominant affection, and give rise to many and formidable accidents." 49.

II. ASTHENIC HYPERÆMIA.

The violet colour which we frequently see on the surface of the legs and feet of elderly people is probably owing to diminished energy of the capillary circulation. It appears that in these cases the blood, having arrived at the termination of the arterial branches, has a tendency to stagnate wherever the force of the heart and arteries is diminished. This is proved by the fact that the horizontal position will remove these discolorations.

"In some of these cases, the blood which passes from the arteries into the capillaries of the feet, returns but in small quantities by the veins, and gradually accumulates to such an extent, as to oppose an effectual obstacle to the arrival of a fresh supply of arterial blood from the heart. The blood thus accumulated in the capillaries, being arrested in its course, coagulates, and obliterates the cavities of the vessels, so that their calibre is filled with coagulated blood, which is often found advancing towards organization. The same series of phenomena must then ensue, as when the blood was accumulated in the capillary vessels under the influence of an acute hyperæmia, (see the preceding article;) namely, the blood becomes black, is no longer adapted to maintain the life of the part, and gangrene supervenes.

Such is the true pathology of the disease termed *gangrena senilis*. There is

at first, in the most dependent portion of the limb, passive stagnation of blood in the capillaries, and, in consequence of the mechanical obstacle to the circulation thus formed, coagulation of the blood which arrives by the arteries, and, as a necessary consequence of these two phenomena, gangrene of the feet and legs."** 51.

The existence of a true asthenic hyperæmia appears to our author to be fully established in the case just described—and ought to be borne in mind by those who conclude that, because a part is more red than natural, it must necessarily be affected with *active* hyperæmia. By covering the part with emollient poultices we only aggravate the disease; whereas by applying active stimulants we rouse the languid circulation of the capillaries. Before proceeding to consider whether the redness observable in the internal organs may not, in like manner, occasionally depend upon passive congestion, it may be worth while to examine whether other instances might not be brought forward to illustrate the existence of asthenic hyperæmia in the surface of the body; especially as some modern pathologists have thought proper to deny its existence altogether.

" During the course of certain acute diseases, in which the functions of the nervous system are more or less seriously deranged, the application of the slightest irritation to the cutaneous surface is sufficient to convert the red colour, which the parts previously presented, into a violet, brown, or even black colour; and thus substitute gangrene in the place of a simple sanguineous congestion. No doubt in such cases the gangrene was preceded by active hyperæmia; but does it necessarily follow from thence that the gangrene was produced by excess of irritation? To me it appears much more probable, that, in consequence of some peculiar modifications of the nervous influence, the blood, after accumulating for some time in a part of the cutaneous surface, at length ceased to move, and became perfectly stagnant, because the capillary vessels being deprived of the nervous influence which should regulate their functions, could no longer expel their contents; and in this way a passive hyperæmia was formed where an active hyperæmia had previously existed. The frequency of gangrene in these cases is directly proportional to the alteration of the nervous influence. Its occurrence is most common in the various epidemics of the plague and typhus fever, in which its appearance is not necessarily preceded by increased vascular action, or active hyperæmia; for it constantly happens that several spots in the cutaneous surface turn spontaneously red, then brown, and finally form a gangrenous eschar." 53.

This explanation of gangrene simplifies, says M. Andral, therapeutics, and confirms the propriety of the old practice of covering with powdered cinchona, &c. the red patches, excoriations, and sores which occur during the progress of fevers, whenever their surfaces presented a grey or brownish colour.

" Asthenic hyperæmia also occurs in the external mucous membranes, either as a primitive affection, or consecutively to an attack of active hyperæmia. Thus after the mucous membrane of the eye has been for some time affected with an active congestion of greater or less intensity, three cases may present themselves: 1. The redness of the conjunctiva may disappear altogether. 2. It may continue indefinitely, though in a less violent degree; but the ill effects which are constantly produced by the application of stimulants, prove that the congestion

* " M. Cruveilhier succeeded in producing gangrene of a limb, by injecting the minute arterial ramifications of the part with quicksilver."

is still kept up, under the influence of some irritation. 3. There are other cases in which the capillaries of the conjunctiva continue minutely injected, and appear dilated and varicose ; but their colour is a deeper shade of brown, is rather increased than diminished by emollient applications, and often disappears altogether under the use of stimulants. How then is the action of these irritating agents to be explained ? Simply thus ; they stimulate the relaxed debilitated vessels of the conjunctiva, restore their natural tone and elasticity, enable them to propel the blood as quickly as they receive it, and thus dissipate the appearance of increased vascularity.

In this last case then, the hyperæmia was asthenic, while in the other two, it was sthenic ; thus we see that, when we propose treating a congestion on the stimulant plan, the question to determine is, not whether the hyperæmia is acute or chronic, but whether it is sthenic or asthenic. It matters little whether the blood flows towards the part congested for a single day or for a series of months ; if irritation be the cause, the application of any description of stimulus will be injurious ; if, on the contrary, the congestion be kept up solely by the passive dilatation of the vessels, stimulants will then act beneficially, by restoring to the over-distended vessels the power of re-acting on their contents." 56.

The mucous membrane lining the mouth presents, in scorbutic individuals, another example of asthenic hyperæmia ; and as it is assumed as an axiom that asthenic hyperæmias may be formed in external parts, the presumption is strong that they may also exist in internal organs. The author commences this important investigation with the lungs. It is acknowledged that no organ is more frequently affected with active hyperæmia than the lungs ; but still M. Andral insists that they are susceptible of other forms of congestion. Thus, he observes, no person will refuse to admit as an instance of asthenic hyperæmia, those sanguineous congestions of the pulmonary parenchyma which so constantly occur in the agonies of death. It is evident in these cases, that the blood driven into the capillary vessels of the pulmonary artery and veins no longer receives from these vessels the impulse that should propel them onwards to the left side of the heart. The lungs are therefore gorged, just as in those animals whose eighth pair of nerves has been divided, or in persons labouring under an apoplectic fit.

" In all these cases the activity of the capillary circulation is diminished, in consequence of the diminished energy of the nervous influence ; and yet the morbid appearances found on dissection are precisely the same as are presented after inflammation ; namely, a great accumulation of blood in the vessels, and in the small bronchial tubes a quantity of serous fluid mechanically filtered from the blood. We should learn from this example not to place too implicit reliance on the anatomical characters of a morbid lesion, as a criterion for deciding the nature of the disease.

But this passive congestion of the lung is not confined to the last moments of the mortal agony. Can we not, for instance, detect its existence in certain cases of convalescence from acute pneumonia, in which a slight degree of dyspnœa remains, and a '*râle crepitant*' continues audible, although the thorax has resumed its natural sound on percussion ? No doubt these symptoms often depend on a trace of the original inflammation still lurking in the part, and not yet subdued ; but I have also seen similar cases, in which the pulmonary congestion continued for a length of time stationary, notwithstanding the employment of antiphlogistics and revulsives, and yet yielded immediately to the use of tonics, such as the decoction of polygala or cinchona." 59.

M. Andral thinks it reasonable to conclude that those substances, when absorbed and carried into the blood, produce the resolution of the pulmonary

congestion, either by directly stimulating the coats of the pulmonary vessels, or else by exciting the centres of the nervous system, and restoring their natural influence over the lung and its circulation. And as asthenic succeeds sthenic ophthalmia, why may not the same occur in pneumonia.

" I am also disposed to think that in some other conditions of the economy, such as severe scorbutic affections, the lungs may be passively congested as well as the gums and certain portions of the cutaneous surface. This at least I am sure of, that in four cases of severe scurvy, two of whom I attended at the Hôpital des Enfans, a third at La Charité, and the fourth in private, all of whom were affected with constant dyspnoea unattended with other symptoms of pulmonary disease, I found, at the *post-mortem* examinations, the lungs not altered in texture, but gorged with an enormous quantity of blood, remarkable for its extreme tenuity and bright rose colour, and presenting the appearance of water slightly tinged with red. A fluid precisely similar in appearance was effused into the cavities of the different articulations; the spleen and liver were also filled with it: in two of these cases several ecchymoses were found between the tunics of the alimentary canal, and in all of them several patches of the subcutaneous and intermuscular cellular tissue, as well as of the skin itself, were infiltrated with blood.

Have we not, again, instances of asthenic hyperæmia affecting the mucous membrane of the bronchia, in persons labouring under chronic catarrh, whose symptoms are relieved or altogether removed by the use of tonic medicines? On the contrary, in those individuals labouring under the same disease, whose catarrhal symptoms, however chronic, are uniformly aggravated by the use of stimulants, the sthenic character of the original hyperæmia would seem to be still preserved." 61.

If these reasonings be founded in truth, M. Andral thinks we may fairly conclude that many of those red patches found after death in the mucous membrane of the stomach and intestines, are simply the result of passive congestion formed during the life of the individual.

III. MECHANICAL HYPERÆMIA.

This, of course, occurs in cases where impediments are thrown in the current of the circulation, either from simple gravitation—defect of proportion between the respective cavities of the heart—compression or obliteration of a venous trunk—or any obstacle to the passage of the blood through the capillaries.

" When the mechanical hyperæmia is carried to a certain extent, other phenomena may arise as its consequence. Thus, the serous portion of the blood, or even pure blood, may escape from the over-distended vessels, just as water or any other liquid transudes through the permeable sides of a vessel in which it suffers compression. To this source are to be referred several haemorrhages and dropsey produced by simple transudation in a tissue mechanically congested; and although these effusions have really nothing active in their nature, yet are they considerably diminished, and sometimes altogether removed, by blood-letting, which in such cases acts in a manner purely mechanical, by removing from the vessels the fluid by which their parietes were kept in a state of over-distention. These pathological observations are well exemplified in the majority of those cases of haemoptysis, haematemesis, ascites and other effusions, which are connected with organic disease of the heart." 68.

M. Andral acknowledges that, in the dead body, it is often impossible to

distinguish the mechanical hyperæmia from the two other species that have been described—the arborescent appearance of the vessels, and the uniform red colour being common to all the species of hyperæmia. We must, therefore, attend less to the appearances of the part congested, than to other circumstances—such as the kind of death which the individual has died—the nature of the preceding disease—and the state of the other organs.

IV. HYPERÆMIA FORMED AFTER DEATH.

That sanguineous congestions are really formed after death, on the surface of the body, may be proved to demonstration. The several steps of their formation may be traced, and the causes which favour their production appreciated. And if sanguineous congestions can be thus formed, after death, on the external surface of the body, analogy leads us, *à fortiori*, to conclude that similar congestions may take place in those tissues which are situated in the interior. In the last moments of life, the blood deserts the surface, and concentrates in the internal organs.

" Observation confirms the justice of this reasoning; for if the body of an animal be opened immediately after death, and the state of the organs as regards their colour and the disposition of the blood, be at the time carefully noted, and if those same organs be again examined at successive intervals, the blood will be found to accumulate gradually in different parts, which immediately after death contained no more than the rest; parts naturally white will turn red; vessels will become visible where not a trace of vascularity could be previously observed; there will be developed a coloration of a uniform red tint, disposed in isolated spots, long stripes, or broad patches; the blood will be seen escaping from its vessels, and forming more or less extensive effusions around them, or else soaking through the neighbouring tissues and imparting its colour to them; and, lastly, the colouring matter of the blood will be seen uniting, in the different serous cavities, and in several points of the cellular tissue, with the colourless albuminous fluid which had been previously effused, or else seen transuding through the tunics of the vessels with the serum, if this fluid had not been previously effused separately. At last, when the body, no longer endowed with life, begins to decompose under the influence of those laws which govern all inert matter, various gases are disengaged, which, traversing the coats of the minute vessels, impart an unusual colour to the blood, just as they are found to do in the case of the experiment where they act on this fluid through the coats of the bladder in which it is contained. In this manner are produced the different brown, livid, and greenish hues observable on bodies undergoing putrefaction. The concave surface of the liver is generally the first part to present this appearance, in consequence of its vicinity to the transverse arch of the colon, which usually contains a large quantity of those gases, and also in consequence of the vast proportion of blood contained after death in the capillaries of the liver, which is thus placed in the most favourable circumstances to undergo these chemical alterations: it is not until after the liver and adjacent parts are thus coloured, that the abdominal muscles and subsequently the integuments present the same appearances. Theory might easily have led us to anticipate these results of observation." 74.

In summing up the causes which produce hyperæmia after death, M. Andral is led to recognize several genera and species which he arranges as follows:—

1st GENUS. Hyperæmia produced in articulo mortis, in consequence of

the contractility of tissue which resides in the small arteries after the cessation of the heart's action. 2d GENUS. Hyperæmia produced at a certain period after death—a genus comprehending three species, viz. hyperæmia by position—by transudation—by chemical affinities. After many interesting remarks on these genera and species, M. Andral goes on to observe, that there is one phenomenon which is liable to succeed to all these species of hyperæmia, namely, the escape of blood from its vessels, and its effusion, either on the free surface of the membranes, into the areolæ of the cellular tissue, or into the parenchymatous texture of the different organs, where it causes, by its presence, a kind of disorganization. The blood likewise escapes from its vessels, in those hyperæmiæ which are formed after death, especially in those varieties which are caused by transudation and by position. The following resumé of all that we know respecting this curious subject is given in the author's words, as translated in the work before us.

1. "There are some cases in which the ordinary signs of sanguineous congestion no sooner make their appearance, than the blood which flows to the organ affected escapes from its vessels, and hæmorrhage ensues. The signs of congestion cease as the blood flows, and the general health is in no way deranged, provided the hæmorrhage occurs in an organ of minor importance, or that it be the result of a natural process, such as the menstrual discharge. If, however, the organ be one whose functions cannot be deranged with impunity, the general health will suffer a proportionate derangement, as in the case of apoplexy or hæmoptysis. In the latter disease, however, the health may be re-established, provided the whole quantity of the blood effused be spit up; but if the blood be only partially thrown up, or if it all remain effused into the pulmonary parenchyma, the derangement of the general health will be permanent; as is exemplified in cases of extensive pulmonary apoplexy. When the bodies of persons dying during an attack of hæmorrhage are examined, the organs from which the blood was effused are sometimes found red and congested, whilst in other cases they are remarkably pale, and, with the exception of the blood effused, present no morbid alteration whatever. Such, for instance, is the appearance often presented in cases of hæmorrhage from the brain, bronchia, stomach, and intestines. This pale state of the bleeding tissues cannot be admitted as proof that no congestion had existed either before or during the hæmorrhage; all that it establishes is the simultaneousness of the afflux of blood to the tissue, and of its escape from its vessels.

2. Blood may for some time continue to accumulate in the vessels of a tissue, without making its escape; and in consequence of this accumulation, gives rise to various functional and organic derangements; but the hæmorrhage does not commence until a later period, when all the symptoms of inflammation have been fully developed. In all such cases, the quantity of blood effused is never so great as in the ordinary forms of hæmorrhage, as will readily appear by instituting a comparison between pneumonia and hæmoptysis, dysentery and melæna, &c.

3. When an organ has been irritated, the blood which flows thither in consequence of that irritation, may at first escape from its vessels in large quantities, and subsequently cease to be effused; and it is at this latter period when the hæmorrhage ceases, that the most formidable symptoms generally occur. In such cases the hyperæmia has only changed its form, but still persists; sometimes assuming an acute type, and advancing rapidly towards its termination, whether favourable or fatal; sometimes, also, retaining a latent chronic character, and laying the foundation of various alterations of nutrition in the organ where it exists. Thus hæmoptysis is sometimes transformed into pneumonia, hæmatemesis into gastritis, menorrhagia into metritis, &c.; thus also these hæmorrhages, after recurring frequently, and leaving some trace of hyperæmia after

them at each visit, lay the foundation for the development of tubercles in the lungs, and of that degeneration, termed cancer, in the stomach and uterus.

4. We have just seen that haemorrhage is in some cases the source from which various chronic alterations of nutrition derive their origin; it is in others evidently the effect of some of these alterations of nutrition; such for instance as induration, ulceration, accidental productions, &c.: around which, congestions, possessing a peculiar tendency to terminate by haemorrhage, are frequently formed.

5. There are some active hyperæmias, which, whether existing simply, or combined with other organic derangements, have never been accompanied with the slightest extravasation of blood, either at their commencement, during their progress, or at their final termination.

6. Morbid anatomy does not afford any distinctive characters between the *post-mortem* appearances, presented by those cases which were attended with haemorrhage, and those which were not.

We know not what the peculiar modification is, which the texture of an organ undergoes, so that in one case it allows the blood determined towards it to escape from its vessels; in another forms pus, or exhales only a thin serum; whilst in a third it becomes indurated, softened, or ulcerated: but there is one common link which unites these different alterations, and hence it is, that under the influence of apparently the same causes, we often see them produced indifferently, and not unfrequently replaced one by the other. Thus an attack of coryza may be ushered in by epistaxis, which may be succeeded, first by a total cessation of secretion from the affected membrane, next by a serous exhalation, and subsequently by a puriform exhalation, which in its turn may be succeeded by a return of the epistaxis, with which the disease first commenced, and by which it terminates. But in all this series of phenomena we can perceive, throughout the whole course of the irritation, one constant lesion, namely, the hyperæmia; and a succession of morbid alterations in the organic action of the tissue affected, producing alternately, haemorrhage, cessation of all secretion, exhalation of serum and of pus, and, lastly, a recurrence of the haemorrhage. I might also adduce here the well-known fact, that in many cases of inflammation of serous membranes, which present no perceptible difference either in their nature, duration, or intensity, pure blood is sometimes found effused, sometimes a simple albuminous fluid, and sometimes perhaps false membranes, &c.

Thus from the observation of symptoms, as well as from the inspection of the part from which the blood flows, (which can be made in cases of cutaneous haemorrhage) we arrive at this conclusion, that *active* haemorrhage is uniformly preceded by the sanguineous congestion of the organ or tissue affected. But are we hence authorized to conclude that every species of haemorrhage depends on increased vascular action? In my opinion, certainly not; for we can easily understand how certain haemorrhages may depend exclusively on some modification of the organic disposition of the coats of the vessels, in consequence of which they may allow the blood to escape. Such a modification surely may exist without depending more on a sthenic, than an asthenic state of the vessels: indeed this fact appears to me abundantly proved by those cases of haemorrhage which yield to the application of astringents, after bloodletting and other antiphlogistic measures have been repeatedly employed in vain." 89.

We have now brought our analysis of hyperæmia to a close, and trust that the article will not be unacceptable to those (and they form a large majority) of our readers, who have no opportunity of consulting the original. We hope, however, that this specimen of the work will induce many to purchase and peruse it, who would not otherwise do either.

VIII.

REPORT OF THE SELECT COMMITTEE OF THE HOUSE OF REPRESENTATIVES, ON SO MUCH OF THE GOVERNOR'S SPEECH AT THE JUNE SESSION, 1830, AS RELATES TO LEGALIZING THE STUDY OF ANATOMY. Reported by a *Select Committee*. Octavo, pp. 118. Boston, 1831.

OF the paramount importance of anatomy to the profession, as well as to the public, we need now say nothing. To argue on the question would be preposterous at this period, when the discussions which occupied men's minds are still fresh and uneffaced, the arguments adduced on either side still ringing in our ears. The sensible and well-educated portion of our countrymen are sufficiently convinced of the necessity for anatomical knowledge; and if the vulgar of all ranks still allow ancient prejudices to blind their eyes, we may hope that they will be dispelled, at no distant epoch, by the advancing light of enquiry and intelligence. That this desirable event will take place, none who watch the signs of the times can doubt. The shadows of the darkness of the middle ages are fading around us, and the enemies of improvement and opponents of reform are beginning to merge and vanish in the gloom. Truth has prevailed and she will prevail; and if justice be upon our side, if reason sanctify our cause, we shall surely triumph, though the day of victory be delayed.

We are not amongst those who would scout and defy the honest prejudices of the people—prejudices nurtured by ages, and hallowed by their finer feelings. Least of all would we mock their prejudices on the subject of anatomy. If there be in human nature one trait of character which derives a more pure and holy origin than another, it is the reverence held by the living to the dead, and the tender regard which shrinks at an injury, merely apparent though it be, inflicted on the deceased. Far be it from us, and from our cause, to deride or to oppose this sacred sentiment, the source of much that is good and great, which binds the child to the parent, and makes the father live in his offspring; far be it from us to discountenance respect for the memory of the departed.

It should be, and indeed it is, the object of those who wish well to anatomy, to convince the public that the profession do pay regard to their feelings, and, because they do so, that they appeal in the manner they have done. The profession would save the living, by advancing the science they profess, and they would do it, as far as possible, without disrespect to the dead. It is the present shocking and degrading system, necessarily adopted for the acquisition of bodies for dissection, which insults society and lacerates its feelings. It is the present system which is calculated to carry horror, and loathing, and wretchedness into the bosom of families, which violates the grave, scathes every domestic affection, raises terror and panic in the public mind, and last, though not least, gives birth and nurture to a race of ruffians.

The subject has attracted or is attracting attention in most of the civilized countries of the world, and we venture to predict that at no remote

period it will become an object of careful and anxious legislation in all. Medicine is a science of such essential consequence to the happiness of mankind, that all which concerns it must, sooner or later, be an object of solicitous research. Men see the importance of anatomy; even now they are busied in devising the means of rendering its attainment as little repugnant as may be. In America, the land of freedom, and therefore that in which the prejudices of the multitude can find, if excited, a loud and indisputable expression, the Legislative Assembly have made anatomy the theme of their deliberations and the subject of enactments. We have before us a report of a select committee of the House of Representatives which does credit to the information, the good sense and the liberality of those who drew it up. Some of our hereditary legislators might usefully brook a lesson from the popular delegates of America.

The report of the committee was given into the House on the 6th of January, 1831, and purports to be grafted on the Governor's speech at the June session, 1830. The committee propose to consider—

- “ I. The Rise and Progress of Anatomical Science :
- II. Its indispensable importance to both great branches of the Healing Art ;
—the practice of Medicine and Surgery :
- III. The interest which Society at large, especially, and the Medical Profession incidentally, have in the modification of the laws of this Commonwealth, so as to afford a reasonable facility for the pursuit of Anatomical Science :
- IV. The Provisions, and the Character and Effect, of our present laws, regulating the practice of Physic and for the Protection of the Sepulchres of the Dead :
- V. The Provisions that have been made in France and other enlightened countries, for the promotion of Anatomical Science ; and
- VI. Present those conclusions, which the Committee recommend for Legislative sanction by legal enactments, with a view to like results in our enlightened Commonwealth.” 5.

They proceed to their task with industry and ability. The gradual rise of anatomical science is shewn with succinctness and precision, and the people of the United States, as of the old world also, may see in the details of its progress, how great discoveries have ever been the work of more than one age, at all events of many individuals. The earlier anatomists were not ripe for the discovery of the circulation of the blood; they could not make it. It was only when dissection had made progress, when Fabricius had demonstrated the valves of the veins, and *perhaps something else*, that Harvey, a student under Fabricius in his Paduan school, worked out the discovery a little farther, and disclosed to the world the circulation of the blood. Thus it is on all occasions that the most original thinkers and reasoners have had their pioneers. From a history of anatomy we also learn how its sober truths dispel the theories and dogmatism of the schools. Before anatomy was cultivated, men credulously received the fancies of Asclepiades, Galen, and Paracelsus; one futile system overthrew another; and the waste of human life and destruction of human comfort, by the earlier sects of physicians, must have been enormous.

Having traced the history of anatomical science, the committee next endeavour to prove that the study and knowledge of anatomy are essential to the safe and successful practice of medicine. The arguments which they employ are well calculated for producing a powerful impression on a mixed

legislative assembly, but unnecessary to the readers of a medical journal. The following short quotation will shew the style in which the question is treated, and will perchance offer an useful hint to some of our own print-loving students.

"Would any one trust a valuable watch—an heir-loom—that in addition to its intrinsic value had a sort of moral and peculiar worth, from its having been the favorite timepiece of a beloved parent, of a departed sage or patriot—would such a valuable relic be trusted even to Roskell himself, had he no other knowledge than was to be learned from finely written descriptions, nicely executed and colored drawings, or even the best and most accurate models; to which however the principle of motion had never been imparted? Would a wise man employ to build the house, in which he meant to say, soul take thy rest, and enjoy the many good things that Providence has allotted thee, a house-builder whose knowledge of his trade had been learned from the works of Palladio or Stuart, rather than one, who, with cultivated mind, had learned the necessary details of his trade over the bench and in his workshop?

And shall we absurdly trust to operate on the human frame, made in God's own likeness, filled with that nice machinery, to which even to approximate would bid defiance to human ingenuity and industry, those individuals who are prepared by the study of only wax models and paper drawings? If we do, accident and good luck may sometimes lead the surgeon to happy results. But he has no certainty in his operation and feels no confidence in himself. He gropes in the dark. He may do this successfully so far as to pass through the great avenues without losing himself.

But how can we expect him with accuracy and celerity to pick up a cambric needle or to remove a grain of sand, not merely from the surface, but from the remotest and obscurest corner of that surface?

It would be far safer and wiser for a ship's crew to trust themselves and their vessel to a blind pilot; for if they took a true departure and knew the course and distance to the place at which they meant to arrive, their chance for a fortunate issue would be far greater." 27.

The Committee, however, can give some information of consequence to medical men themselves. Thus we find them incidentally allude to "a secret worth knowing," a cure for dyspepsia.

"Within the last twenty-five years we have heard very much of Dyspepsia, a malady of general prevalence and of afflictive results. Quite recently, a cure is said to have been discovered for it by Mr. O. Halstead, a bookseller of New-York city, who has published an interesting account of his process. An examination of this publication has satisfied the committee, that without the lights thrown by anatomical science on the human economy, Mr. Halstead's mode of cure would not have been discovered. His mode consists:

"1st. In a relaxation of the external muscles of the abdomen by external applications; and 2dly, in applying external excitement through the nervous system to the coats of the stomach. Had he not been generally acquainted with the anatomical structure of man, he would never have been brought to the conclusions, he is said so successfully to have applied to practice; and if his theory be sound, he has been most fortunate in possessing enough sagacity to draw the true inferences from the premises, anatomy had supplied him." 43.

We are afraid that Mr. Halstead's cures are not likely to confer great glory on the cause in the service of which they are enlisted. But this by the way. The Committee justly dwell on the important and invincible truth, that the judicious legalization of anatomy is calculated to prevent the feelings

of friends from being harrowed, by avoiding the indecent exposures necessarily entailed on society by the system of exhumation. The feelings of relatives and friends are not to be contemned but respected; the associations which encircle the memory of the dead are to be consecrated, not disturbed. The Committee next inquire, who has the greatest interest in facilitating the study of anatomy, the profession or the public? The latter most decidedly. Be physicians and surgeons anatomists or not, disease and accident will come, and men, when afflicted with corporeal ills, will fly for assistance to art, however imperfect it may be. It is true that, without anatomy the profession would be less scientific; its members would not practise according to knowledge, but kill according to rule; yet still they must be employed, and still they must be paid. It is idle and preposterous to talk of medicine alone being the gainer by anatomical pursuits. In Massachusetts there is no direct law upon the subject of anatomical dissections.

" But there are two laws, which have an important, though not an immediate bearing on this subject. In 1815 a law was passed for the protection of the sepulchres of the dead, which punished the exhumation of any dead body, or the knowingly and wilfully receiving, concealing or disposing of any such dead body, by a fine of not more than S. 1000, or imprisonment for not more than one year.

Before the passing of this act, several cases at common law were brought before the Supreme Judicial Court; in all of which, where there was a conviction, the party was punished. Where it appeared that the exhumation was for subjects for Dissection, a small fine was imposed. The last case of this kind was against a now eminent physician, then of Essex County, in which several important law points were raised, but the case does not appear to have been reported. Under the statute, there have been several prosecutions, convictions and punishments. A similar statute exists in New-Hampshire and in Vermont. In New-Hampshire the punishment is by fine, not to exceed S. 2000, whipping not to exceed 39 stripes, or imprisonment not to exceed one year—all or any of these punishments to be inflicted at the discretion of the Court.

The Vermont statute varies from that of New-Hampshire only in the fine, which is S. 1000 instead of S. 2000. The other provisions are the same." 63.

Thus the law is severe against exhumation, the only possible means of obtaining subjects for dissection; and yet, with the same tyrannical inconsistency as that displayed in our own code, another law has been enacted, compelling every practitioner of medicine to obtain a degree or a licence before he may venture to practise—that degree or licence not being obtainable without the display of minute anatomical knowledge. The price of subjects in Boston is double what it was ten years ago, and from fifteen to twenty subjects are annually required for the medical school—the price being from S. 15. to S. 20. each.

" The only legalized mode of supplying subjects for dissection is the sentence or order of the Supreme Judicial Court of this state, and of the Circuit Court of the United States, in capital convictions within their respective jurisdictions. The insufficiency of this supply may be inferred from the statements of the secretary of the Commonwealth, and of the clerk of the United States District Court. The secretary of the Commonwealth states, in answer to inquiries addressed him by the chairman of this committee, that the whole number of executions or suicides of convicts from January 1, 1800, to December 31, 1830, is but 26, less than one a year. The clerk of the United States District Court,

in reply to like inquiries from the chairman states, that from the adoption of the Federal constitution and the first organization of the Federal Courts, down to the present time, the whole number of executions and of suicides of convicts, sentenced by that Court in this District, is but fourteen, being about one in three years. The absolute inadequacy of this supply, from either or both of these sources for any useful purpose, added to the consideration that the infliction of dissection as a part of the sentence in capital cases, has done much to create, and will do much to continue, the prejudice against anatomy existing in the community, has suggested to your committee the expediency of a different provision from that now existing, in relation to the dead bodies of those capitally convicted, so far as the subject is within the control of the State legislation. If dissection be no longer inflicted by our State Courts, as a terror and disgrace, —full and free discussion of this interesting and important topic may, we hope, soon disabuse the public mind of its worst prejudices in relation to it. Your committee cannot doubt, that the deservedly eminent judge and scholar, who holds the United States courts in this Judicial District, will so far as his important influence extends on this and every other subject, be found against unfounded prejudice, and on the side of liberal science and true philosophy." 68.

The Committee take a survey of the state of the laws on anatomical investigations in England and France. In the latter country, they challenge the approbation of all well-informed persons.

" It now becomes the duty of your Committee to present their own conclusions, on this whole matter, which they would recommend to the sanction of the General Court. They may be thus stated : That—

Ist. Anatomy is an important science, whose successful cultivation and improvement is of essential interest to all classes of the population of this Commonwealth.

IId. Dissection for anatomical purposes is highly laudable, and deserving of public encouragement, so far as it can be done without violence to the feelings of surviving relatives or friends.

IIId. That the Laws of the Commonwealth, which now act indirectly on the study of anatomy, require change, and that the study of anatomy should be legalized.

I. For this purpose the Committee propose so far to alter the statute of 1815, for the 'protection of the sepulchres of the dead' as to authorize the proper Municipal authorities, in the city of Boston, and in the several towns of the Commonwealth, to deliver to any physician, regularly licensed according to the laws of this Commonwealth, such dead bodies as may be required to be buried at the public expense and which shall not be claimed by any *one* person, *whether kin, or friend, or acquaintance*, within twenty-four hours from and after death. This permission should be accompanied with restrictions, that the physician so receiving a subject, after he had used it for scientific research, should be bound to have its remains properly interred, with the religious funeral rites, that a Christian people ought to require and must approve.

II. The proviso, authorising the Courts to dispose of bodies of executed criminals for dissection should be repealed.

III. That the penalty for disinterring dead bodies or for receiving them, knowing them to have been so disinterred, should be increased, so as effectually to guard against any attempt to transcend those limits for the supply of anatomical subjects, which this enlightened Legislature may designate. These views the Committee have combined in a bill, which is appended to this Report." 74.

It has been urged in America, as it has been urged in this country, that by consigning the bodies of the unclaimed poor to the purposes of dissection, poverty is branded as a crime. Undoubtedly the argument is specious, and

the case seems hard. But much is to be urged in defence of the measure. If dissection be absolutely and indispensably required, which it can be and has been proved to be, it necessarily follows, that the bodies of some class of persons must be taken for the purpose. By repealing the law which makes dissection part and parcel of the punishment for crime, it will lose its disgraceful character, and become merely an imaginary hardship. But still it will be a hardship, and to whom? to the dead? it matters not to them. By taking the bodies of unclaimed paupers only, the feelings of friends are not wounded, and the only individual who can feel a pang is the dying pauper himself. Those who see much of death in the lowest classes will probably admit that, with such a person, such consideration will commonly have little weight. If they think of it at all, they will think of it as an evil inseparable from their lot, and not to be ranked with the many positive ills they suffer. It must not be forgotten that the unclaimed poor, in our hospitals and alms-houses, are mostly those whose lives have been vicious and characters abandoned—the prostitute, the vagrant, the sot. If any are to suffer after death for the community, it should surely be those who have contributed evil rather than good to it when living. At last, indeed, the dispute resolves itself to this:—Dissection being necessary, the legislature must provide it, at the lowest possible expense of individual hardship and general disgust. As far as the wit of man has hitherto been able to discover, the appropriation of the unclaimed poor, when dead, to its purposes, is the best and most reasonable way of meeting the difficulty.

"It appears from a statement obtained at the Boston Health Office, that from January 1, 1830, to December 21, inclusive, there were 194 burials at the expense of the City, and also in addition, 88 burials in the Tombs of the House of Industry at South Boston. The number of burials of the same description in other towns of the Commonwealth would be considerable, but less in proportion to the population. There can be no doubt the supply of subjects would be ample." 77.

The Committee, having terminated their Report, recommended to the legislature of Massachusetts a bill, which, with some modifications, the Legislature adopted. It passed the House, received the Governor's signature, and is now a law. The profession and the public on this side the Atlantic may see, by the Act in question, that America has, on this occasion, led the way in the march of liberality and improvement.

"SENATE, No. 21.

The Amendments of the House of Representatives are printed in Italics, and were all moved by the Chairman, J. B. Davis, Esq. to meet the views of the House.

Commonwealth of Massachusetts.

In the Year of our Lord One Thousand Eight Hundred and Thirty One.

AN ACT

More effectually to Protect the Sepulchres of the Dead, and to legalize the Study of Anatomy in certain cases.

SECT. 1. *Be it enacted by the Senate and House of Representatives in General Court assembled, and by the authority of the same,* That if any person, not being authorized by the Board of Health, Overseers of the Poor, or Selectmen in any

town of this Commonwealth, or by the Directors of the House of Industry, Overseers of the Poor or Mayor and Aldermen of the City of Boston, in said Commonwealth, shall knowingly or wilfully dig up, remove or convey away, or aid and assist in digging up, removing, or conveying away, any Human body, or the remains thereof, such person or persons so offending, on conviction of such offence in the Supreme Judicial Court of this Commonwealth, shall be adjudged guilty of felony, and shall be punished by solitary imprisonment for a term not exceeding ten days, and by confinement afterwards to hard labour for a term not exceeding one year; or shall be punished by a fine not exceeding two thousand dollars to enure to the benefit of the Commonwealth, and by imprisonment in the common jail for a term not exceeding two years at the discretion of the Court, according to the nature and aggravation of the offence.

SECT. 2. *Be it further enacted*, That if any person shall be in any way, either before or after the fact, accessory to the commission, by any person or persons of the offence described in the first section of this act, such person or persons shall be adjudged and taken to be principals, and shall be on conviction in the Court aforesaid, subject to the same punishments and forfeitures as are in said first section provided.

SECT. 3. *Be it further enacted*, That from and after the passing of this Act, it shall be lawful for the Board of Health, Overseers of the Poor, and Selectmen of any town in this Commonwealth and for the Directors of the House of Industry, Overseers of the Poor, and Mayor and Aldermen of the City of Boston in said Commonwealth to surrender the dead bodies of such persons, *except Town Paupers*,* as may be required to be buried at the public expense to any regular physician, duly licensed according to the Laws of this Commonwealth, to be by said physician used for the advancement of anatomical science; preference being always given to the Medical schools that now are or hereafter may be by law established in this Commonwealth, during such portions of the year as such schools or either of them may require subjects for the instruction of Medical Students: *Provided always*, That no such dead body shall in any case be so surrendered, if within thirty-six hours from the time of its death any one or more persons claiming to be kin, friend, or acquaintance to the deceased, shall require to have said dead body inhumed: *or, if it be made to appear to the Selectmen or Overseers of the Poor of any town in this Commonwealth, or to the Mayor and Aldermen or Overseers of the Poor of the City of Boston, that such dead body is the remains of a stranger or traveller, who suddenly died before making known, who or whence he was*; but said dead body shall be inhumed, and when so inhumed, any person disinterring the same *for purposes of dissection*, or being accessory as is described in the second section of this Act to such exhumation, shall be liable to the punishments and forfeitures in this Act respectively provided: *And provided further*, That every physician so receiving any such dead body, before it be lawful to deliver him, the same shall in each case give to the Mayor and Aldermen of the City of Boston, or to the Selectmen of any town of this Commonwealth, as each case may require, good and sufficient bond or bonds, that each body by him so received, shall be used only for the promotion of anatomical science; that it shall be used for such purposes only in this Commonwealth, and so as in no event to outrage the public feeling; and that after having been so used the remains thereof shall be decently inhumed.

SECT. 4. *Be it further enacted*, That from and after the passing of this Act, it shall be lawful for any physician duly licensed according to the Laws of this Commonwealth, or for any Medical Student under the authority of any such physician to have in his possession, to use and employ human dead bodies, or the parts thereof for purposes of anatomical inquiry or instruction.

* "Those who receive charity from the overseers of the poor, and die out of the alms-house, or House of Industry, as we term it."

SECT. 5. Be it further enacted, That nothing in this Act, shall be so construed as to give to the Board of Health, Overseers of the Poor, or Selectmen of any town in this Commonwealth, or to the Directors of the House of Industry, Overseers of the Poor, or Mayor and Aldermen of the City of Boston, in said Commonwealth, any power to license the digging up of any dead human body, or the remains thereof, other than was possessed by them before the passing of this Act, or is given them by the third section of this Act.

SECT. 6. Be it further enacted, That the Act passed March 2, 1815, entitled 'An Act to protect the Sepulchres of the Dead,' and also all other Acts or parts of Acts, contravening the provisions of this Act, be and the same hereby are repealed.

House of Representatives, Feb. 11, 1831.

Read three times and passed to be engrossed,

Sent up for concurrence,

P. W. WARREN, 'Clerk.' 4.

It will be obvious to our readers, that the foregoing Act embodies in its provisions most of what has been desired in this country. So far as we can see, it leaves untouched the penal statute, which makes dissection part of the punishment for murder and other great crimes. Probably, this may be the object of a separate enactment. The Act of the Massachusetts Assembly appears to be straightforward and simple, and calculated to answer the ends proposed. It has infinitely the advantage over the legislative bantling which, we had almost said fortunately, miscarried in this country. The American law leaves no field for trickery; does not open a job here and erect corners for abuse there; does not constitute boards, and licenses, and committees; in fact it is not stained by that leaven of the patronage system, which seems to infect every action of every institution in this happy land. The American law simply provides bodies for dissection, and gives them first to the medical schools—to regularly-educated medical men when the schools have been supplied.

In conclusion, we beg to press one consideration on our medical brethren in town and country. At the present moment, foreigners are excelling us in the cultivation of our science, and there can be little question that this is owing to their superior facilities for the acquisition of anatomical knowledge. In America, where obstructions were thrown, as here, in the way of the profession, those obstructions are vanishing before the energetic appeals of that profession to a wise legislature. Let us imitate their example, and we shall equal their success. Let us vindicate for ourselves the claim of being heard, and let us shew that, by our perseverance, our consistency, and still more by the justice of our demands, we *will* be attended to. The victory is sure if we combine. If our Commons' House should be altered, and amended, in its constitution, as most probably it will be, the voice of the middle classes will acquire a louder tone, and the profession can make its demands more audible. Petitions should be presented, the country and the London surgeon should enlist on their side the individual members of the legislature with whom they become professionally acquainted; and all should endeavour to dispel the prejudices which still reign in the minds of a portion of the public, a portion which we believe to be comparatively small, at least in the educated classes. Again we exhort the profession to bestir itself, to shake off its lethargy, to urge its wishes and desires at all proper opportunities: we exhort it to success. Liberal insti-

tutions are rising around us; the lion of freedom has roused himself, and its enemies are lookingaghast. It is with science as it is with the political institutions of nations; she is withered and cramped by the trammels of oligarchies and of despotisms. Let her be free, say we, as the air we breathe, for the more she is released from her bondage, the more bold will be her gait, the more bright will be her hue.

IX.

ESSAYS ON THE EFFECTS OF IODINE IN SCROFULOUS DISEASES;
INCLUDING AN INQUIRY INTO THE MODE OF PREPARING IODURETTED BATHS. Translated from the French of *M. Lugol*, Physician to the Hôpital St. Louis, by *W. B. O'Shaughnessy*, M.D. With an Appendix by the Translator, containing a Summary of Cases, &c. Octavo, pp. 218. Highley, October, 1831.

SCROFULA is a disease, or rather congeries of diseases, the importance of which, especially in England, will not be doubted; while the remedy treated of in the volume before us is comparatively new, and, we are strongly convinced, one of immense power in various maladies. The greater part of the work here presented in an English dress consists of three essays, published at short intervals (in 1829, 30, and 31) by Dr. Lugol, one of the physicians of the St. Louis Hospital in Paris. These essays were warmly eulogized by Magendie, Serres, and Dumeril, in their reports to the Royal Academy of Sciences, as well as by the medical press of France, while a prize of six thousand francs was voted to the author by the Institute; so that they come before the British faculty with no trifling testimonies in their favour. It is also to be borne in mind, that Dr. Lugol had every facility that could be desired for the benefit of his investigations—extensive wards dedicated exclusively to the treatment of scrofulous disease—and no limit to the period of residence. The results appear astonishing, as regards the success of the remedy; and the translator candidly confesses his belief that the amelioration may, in a few instances, have depended on other agencies than those of iodine; as the efforts of nature or the revolution of the seasons. Some of the cases, too, he thinks, though apparently cured, will ultimately relapse.

“ But admitting all this (and the concession does not extend to more than a small fraction of the cases), where is the competent practitioner, who, after a perusal of the following pages, will refuse to admit, that M. Lugol’s treatment has in numerous examples rescued the patient from the alternative of the knife or the coffin, and in the majority has at least effected decided, though perhaps temporary, improvement.”—*Preface*, viii.

The work is divided into three parts. The *first* is on the treatment of scrofulous diseases by iodine—the *second*, an inquiry into the effects and mode of employment of ioduretted baths in scrofulous diseases—and the *third* is a reiteration, or rather continuation, of the first—the treatment by iodine. The Appendix is alluded to in the title-page.

The report of Messrs. Serres, Magendie, and Dumeril to the Royal Academy, presents a very good *coup d'œil* of the work, and with it we shall commence our analysis.

"In the first place, we would remind our hearers that the scrofulous affections, long known under the names of 'cold humours,' or 'the evil,' constitute a class of those slow, unsightly, and often hereditary diseases, which strike despair into whole families, from the absolute rarity of their cure, and from the irremediable light in which they are regarded by the majority of physicians, and by the hospital regulations. Hence, also, the afflicted patients submit themselves to the illusive practices suggested by superstition; for, though medicine has successively tried all the remedies with which she is acquainted (the number, and even the absurd variety, of which attest too strongly the want of a certain method of cure), it must still be confessed, that up to the present time an efficacious mode of treatment remained to be made known.

Sometimes this disease is external and visible, and shows itself under the skin by swellings, which are slowly developed, become softened, burst, and remain ulcerated for a lengthened period, and thus produce callous and incurable scars; it takes its place in the substance of the integuments, which it renders deformed and disgusting; attacks the ears, the eyelids, the nostrils, and the lips, which become horribly tumid, or are corroded to such an extent as utterly to disfigure human nature.

Sometimes, more deeply hidden, the scrofulous habit attacks the bones and their articulations, obstructs the canals which transport the lymph and chyle, or produces in the lungs, and most important organs, tubercles which ultimately soften, and degenerate into purulent centres, thus giving rise to serious morbid alterations in the living economy, which eventually yields to the effects of the disease.

Such is an abridged view of the frightful malady to which M. Lugol, with zeal, perseverance, and success, has opposed a remedy, not absolutely new, but which had never previously been administered with so much method and precaution, to such a number of individuals at once, or with such evident and decided success.

M. Lugol is one of the distinguished physicians attached to the Hôpital Saint Louis, the only hospital in Paris where a great number of scrofulous patients are admitted for internal treatment. This circumstance explains how, in the short period of seventeen months, from the 10th of August, 1827, to the 31st December, 1828, M. Lugol has been enabled to collect the detailed cases of upwards of 100 patients; in whom he, of course, found great variety in the seat and intensity of the disorder.

Before your commissioners proceed to give an analysis of the memoir, they deem it right to declare, that they have not at all confined themselves to the scrutiny of its contents; but that they have seen, examined, and questioned the patients under treatment, and have also visited some of those reported cured or convalescent,—that all the author's assertions have been found scrupulously exact,—that many of the patients who were under treatment when the Memoir was finished, have since been completely cured.

Without restricting ourselves to the order followed by M. Lugol in his Treatise, we proceed to make known its principal results.

In the first place we may observe, that he uses two preparations of iodine: the one, exclusively intended for internal administration, is a solution of this simple substance in distilled water. The others are proper for external application, whether as ointments for ulcers, pomade for frictions, or watery solutions of varied strength, for collyria, lotions, and injections.

The motives which have induced M. Lugol to employ by preference the aqueous solution of iodine, appear exceedingly plausible. So active a medicine can

scarcely be administered in an hospital without inconvenience and uncertainty, except in the form of a drink. The alcoholic tincture and syrup of iodine present many disadvantages in the exact measurement and distribution of their doses, while a pint, or half a pint, of distilled water, containing in solution a little common salt, and a fixed quantity of iodine, affords us an easy, precise, and economical method of dispensing the remedy. Two degrees of this solution intended for the patients, and designated by the name of 'Mineral Water' No. 1 and No. 2, the first containing two-thirds of a grain, and the second one grain of iodine in solution, have furnished the means of dosing exactly from day to day, and of recognising the effects of what was previously employed. Thus, half of No. 2 is the first allowance, the entire of No. 1 the second, and, finally, the whole of No. 2.*

As to the preparations intended for the external treatment, these are unctuous substances of a certain weight, and associated in determined and successively increasing proportions with iodine, ioduret of potassium (hydriodate of potash), or with the proto-ioduret of mercury.

These simple means have sufficed M. Lugol for the treatment and cure of numerous cases, twelve of which, selected from the different species of scrofulous affections, are described in the Memoir. Three relate to ulcerated tubercles, cured in three, seven, and twelve months. Two cases are also described of ophthalmia and coryza, one of which yielded to a treatment of forty-six days, while the other was prolonged to the ninth month. A case of fistulous abscess deeply situated in the cellular tissue, has required nearly a year's care. Four cases are also recorded by M. Lugol, of that frightful form of the disease most usually denominated 'dartre rongeante,' but which the author names the *esthiomenic* (or corrosive) scrofula. Finally, a case of scrofulous caries is detailed. This last form has generally been found very intractable. M. Lugol is only able to advance this single case of cure. It will be remarked, also, that the proto-ioduret of mercury was used, and that there still remains a small fistula as yet unhealed, but which appears to have a tendency to cicatrisation.†

All these cases are given at great length, they present complete accounts of the history and symptoms of the patients at the time of their first examination, and before the treatment was commenced. Many of the cases have been figured, and a record is presented of the modifications which have supervened during the treatment, as noticed twice every month, until the cure or discharge of the individual.

The author of the Memoir has carefully noticed the effects produced by the iodine on the animal economy. Applied externally, its local action has always been very sensible : it determines on the surfaces of the ulcers a feeling of smarting, accompanied with painful itchings. *This application to the diseased surfaces changes their appearance, and frequently produces as appreciable an effect as that determined by mercury on venereal ulcers.* Moreover, the mode of its action does not appear to be invariably the same : sometimes the iodine seems to melt down and resolve the tubercles, sometimes, on the contrary, it urges them

* "It will be seen, in the third part of this Memoir, that the author subsequently altered his formula, and substituted for it a solution of iodine in the hydriodate of potash. The first prescription, however, cannot be omitted here, so closely is it interwoven with the treatment of the twelve interesting cases in the first Memoir. Additional reasons, stated in the Appendix, concur to render the account of this simple solution of iodine a subject of considerable importance.—TRANSLATOR'S NOTE."

† "In the Third Part of the Treatise many additional cases are recorded of the successful treatment of caries, hypertrophy, and spontaneous luxation of the bones.—TRANSLATOR'S NOTE."

on to rapid suppuration. At other times the painful sensation appears to diminish in proportion to the healing of the surfaces, an effect which is perhaps dependent on habit; nevertheless, some ulcers remain sensible while the curative process is not at all established.

Internally administered, and always in small doses, and with the most prudent slowness, the ioduretted water constantly excites the appetite, and appears to increase the urinary and salivary secretions. Sometimes, but very rarely, it has become purgative to so considerable an extent that its use was necessarily suspended, at different intervals, from two to three days each. In other and still rarer cases, in which the solution of iodine appeared to occasion pain in the stomach, the wine of quinquina, given according to the directions of M. Coindet, in a dose of two or three ounces, put an end to the troublesome symptoms. M. Lugol, however, always declined as much as possible this association of remedies, in order to avoid complexity in the results of his treatment.

Iodine, administered in this diluted form, has never caused emaciation nor produced the expectoration of blood or other accidents, which many have imputed to its action.

From the contents of the first Memoir it appears that M. Lugol has treated with iodine alone, in seventeen months, at the Hôpital St. Louis, 109 scrofulous patients, of which 61 were males and 48 females.

That at the close of last year, 39 (29 males, 10 females) were still under treatment.

That 30 (17 males, 13 females) had quitted the hospital with marked improvement.

That in four cases (2 males, 2 females) the treatment was ineffectual.

Finally, that 36 (13 males, 23 females) were discharged completely cured.

The author concludes, from all the facts he has collected, and the researches he has conducted, that iodine deserves to be considered as the most efficacious remedy in scrofulous diseases, since it has constantly arrested their progress, or at least exercised a salutary action in the treatment of all tubercular tumours, even when it has not evidently accomplished their cure. He therefore believes that the introduction of this remedy into medicine is one of the most valuable acquisitions the healing art has made in modern times.

We shall then confine ourselves to say, that after having made ourselves acquainted with the facts cited in the memoir, we have been enabled to confirm the evident action of the remedy; and that we believe M. Lugol to have effected a work of great utility by availing himself of the facilities afforded by his situation, in seeking for a remedy for a disease hitherto so deplorable and desperate. We consequently propose to the Academy to encourage this physician to persevere in the researches which he has hitherto pursued with so much zeal and sagacity.

(Signed)

SERRES,
MAGENDIE, and
DUMERIL, Reporter." 9.

The first chapter is dedicated to an enquiry into the pharmaceutical preparations of iodine. After some remarks on Coindet's tincture of iodine, and M. Henry's syrup, the author states his preference to the perfect solution in distilled water.

"At first I fixed this vehicle at a pound, in this I dissolved half a grain, two-thirds of a grain, or a grain of iodine, in order to have at my disposition three degrees of the same remedy, to be used according to the individuals and periods of treatment."

"I have denominated these three degrees of the solution as ioduretted mineral water, No. 1, 2, and 3. In all cases I commenced by No. 1, seldom proceeding to 2 till the second month of treatment. I have by no means given No. 3 to

all scrofulous patients, and I have never had occasion to pass this last dose of one grain per day." 12.

By this it appears that M. Lugol never ventured so far as M. Coindet in the doses of iodine, who gives it to the extent of three grains per diem. He objects to the tincture of iodine, because, when put into water, the iodine is precipitated in the pure solid state, and thus may produce intense excitement in the stomach.

" But whatever merit may be possessed by the preparations thus recommended for internal use, they do not answer a purpose of frequent occurrence in scrofulous cases, viz.—that of local treatment. I, therefore, at first, prescribed a particular ointment, of three different strengths, composed of hydriodate of potash and iodine.

IODURETTED OINTMENT.

	No. 1.	No. 2.	No. 3.
R. Fresh Lard	fljij.	..	flbij.
Hydriodate of Potash	3iv.	..	3v.
Iodine.....	3iv.	..	3xvj.

Afterwards I made use of a solution of iodine, which occasionally forms a valuable substitute for the preceding ointment, especially in scrofulous ophthalmiae, and for the injection of fistulous canals.

	No. 1.	No. 2.	No. 3.
R. Iodine.....	gr. ij.	gr. iij.	gr. iv.
Hydriodate of Potash	gr. iv.	gr. vj.	gr. viii.
Distilled water.....	flj.	flj.	flj."

During the early part of his experience, M. L. dressed ulcers or rubbed tumours twice a day; but as this practice was often followed by irritation, he now limits the operation to once in the 24 hours, except in particular cases of profuse suppuration.

I. EXTERNAL LOCAL EFFECTS.

" The external employment of iodine ordinarily produces intense local action, and often causes a prolonged sensation of prickling and smarting, especially severe on bathing days.

In many cases this action terminates by a fit of itchiness, short in proportion to the duration and the degree of pain first experienced.

A few days are sufficient to change the aspect and improve the condition of ulcers, whether suppuration be produced or not." 15.

Illustrative examples are given from practice. The author avers that it is no exaggeration to say that "iodine changes the appearance of scrofulous ulcers sometimes more quickly than mercury modifies that of syphilitic sores." He has seen ulcers too quickly cicatrized—that is before the complete resolution of the tubercles. The skin, when rubbed with iodine, becomes of a reddish yellow colour, from absorption, its presence in the cutaneous tissue, and its injection into the capillary vessels. The epidermis soon becomes detached in layers, so that the ointment comes into immediate contact with the true skin.

II. INTERNAL EFFECTS OF IODINE.

" The internal use of iodine frequently produces particular effects; one of the most important noticed at St. Louis was the increase of appetite in the patients

to such an extent that the hospital allowance of food was scarcely or not at all sufficient. This is certainly one of the best effects of iodine, for not only does it indicate an improved state of the digestive organs, but it enables us with ease to invigorate the general constitution by wholesome nourishment, which is particularly valuable in scrofulous patients, in whom very frequently the appetite is almost entirely deficient.

This ordinary effect of the ioduretted preparations on the animal economy sufficiently denotes the numerous applications which may be made of them in the treatment of other diseases, here unnecessary to enumerate, but in which the digestive organs require to be excited.

Iodine is a powerful diuretic.* All the patients using it have informed me that they pass urine copiously; and I have known this secretion to be so much increased with many that they were obliged to rise once, twice, thrice, or oftener, by night, than was their usual custom; some have even experienced this diuretic action of the ioduretted mineral water in so instantaneous a manner that iodine was detected in their urine almost immediately after the dose was taken.

More than one-third of the patients who used it have experienced a purgative effect also, and in this respect there prevailed much diversity, from mere freedom of the alvine evacuation, to six or seven stools daily."

" This purgative action of iodine, when kept up to a certain degree, prevented my increasing the dose without much caution; but it never caused me to suspend the internal employment of the remedy, except for intervals of two or three days, as I did with the ointment, when it smarted too powerfully.

Iodine has also produced, in several instances, remarkable salivation. I have seldom observed that effect but in *male* patients. It was especially remarkable in Poiré (see Case X.), who was salivated most profusely in the morning after drinking the mineral water. The ioduretted frictions also operated remarkably in this case.

Several patients, the females especially, have complained of pain in the stomach. I have always stopped this uneasy symptom with the kina wine, of which the patients took two or three ounces after their mineral water. On this point, M. Coindet's experience anticipated mine; and my observations, on the other hand, have verified those of that excellent practitioner, on the efficacy of kina in appeasing the cardialgic affections sometimes produced in certain individuals by the use of iodine." 20.

Although it is desirable to test the effects of iodine by administering it separately; yet there is no reason why we should not combine it with various other remedies, in particular cases, and to answer various indications.

The author denies that iodine injures the health in any way, or even causes emaciation, when properly administered. He has never seen an instance of emaciation from its use.

" Far from being ever hurtful, it is a powerful stimulant which revives the organic functions, fortifies the general constitution, and *encourages the growth and increase of size*. I have drawn up a statistical account of the scrofulous females treated in the course of eighteen months, and I may cite here as the general results: 1. *That thin females* have acquired a state of *embonpoint*. 2. *That cor-*

* We believe we were among the first to notice this effect of iodine, in this country. Mr. Guthrie and the Editor of this Journal witnessed the extraordinary diuretic effects of iodine in the case of a gentleman, who perfectly recovered from ascites and diseased liver, after being twice tapped, and being on the eve of death from visceral disease and serous effusion in the abdomen.—*Ed.*

pulent women have not become emaciated. 3. That those not belonging to either of the preceding heads, have lost nothing of their middle state, but have gained increased strength and improved health." 23.

In the succeeding section Dr. Lugol maintains that iodine does not produce pulmonary tubercles, haemoptysis, or other accidents apprehended by some practitioners. On this subject we need not dwell, as few practitioners in this country entertain any such apprehensions.

The second chapter is dedicated to a narrative of cases illustrating the efficacy of iodine in tubercular scrofula—in ophthalmia and scrofulous coryza—in scrofula of the cellular tissue, or scrofulous abscess—in cutaneous scrofula—in corrosive scrofula—and in scrofulous caries. On these we cannot enter; but strongly recommend a careful perusal of them by every practitioner. While the author sets forth the extraordinary success of the remedy in various diseases—a success which was witnessed and which excited the admiration of numerous foreigners in the Hôpital St. Louis—he does not silently slur over "the cases, too numerous, which have proved refractory to the remedy;" but properly animadverts on the evils inflicted on science by the abuse of "universal propositions."

PART II.

This embraces an inquiry into the effects and mode of employing IODURETTED BATHS in scrofulous diseases. We are informed by the author that metallic baths decompose the iodine, and therefore he uses wooden troughs, which exert but little action on the solution.

" My first formula was composed of one ounce of the hydriodate of potash, and an half ounce of iodine, dissolved in twenty ounces of distilled water, and next diluted in the quantity of water necessary for a bath; but this bath having produced intense rubefaction of the skin, I reduced it in the sequel one-fourth, and composed the bath for an adult with six drachms of the hydriodate of potash and three of iodine.*

With this formula, which is the strongest I at present employ, I have administered the ioduretted baths to a great number of persons. The following observations are of importance to be attended to.

The lady first experimented on had still her skin too intensely reddened.

A young lady of 17 could not support it; her skin was reddened, especially at the neck; and what was evident to the view, and well worthy of remark, was, that the skin of the neck where it was tubercular was more reddened than at the opposite side.

A young lady of 18 (see Case V.) could not endure the bath at this strength.

Another, æt. 7, found it also too irritating, and on one occasion could not be kept in the bath.

The child of four years old (the subject of the third case) was powerfully rubefied, and had its penis inflamed by a bath composed of five buckets of water, and one-fourth of the iodine solution prepared for an adult.

* " The hydriodate of potash, as was first ascertained by M. Bauf, apothecary at Vevay, can, in concentrated solution, dissolve twice as much iodine as it contains itself (once and a half its own weight); but as this solubility of iodine diminishes in proportion to the increase in the quantity of water, I have adopted the proportions recommended by this apothecary, namely, one part and a half of iodine, to one of hydriodate of potash. It, besides, appeared to me useful not to change an established formula, and one generally followed.—AUGUST'S NOTE."

A school-boy, æt. 15, was powerfully rubefied, as well as his father, who stirred up the bath with his arm, in order to render the solution uniform, to estimate its temperature, and to judge, by his own sensations, if the bath smarted so severely as his son asserted.

M. —, æt. 25, had the skin much reddened, and that of the penis inflamed for several days, so much so that he was feverish at one interval for thirty-six hours.

Now, the bath which produced these accidents contained about three drachms French, or about 216 grains of free iodine for 240 quarts of water, that is, about nine-tenths of a grain per quart. But I have long since been in the habit of administering internally, without inconvenience, a grain of iodine daily in twelve ounces of the vehicle, to the majority of my scrofulous patients in the second period of their treatment. I daily caused the eyes, nose, and lips, to be bathed, and fistulous channels to be injected with a solution containing three, four, or five grains of iodine to the pound of distilled water.

In certain scrofulous diseases of the skin, tubercles, cellular tissue, &c., I have found an ioduretted solution of half an ounce of hydriodate of potash and two drachms of iodine, in eight ounces of water,* to act as a powerful rubefacient and caustic.

Now, if we compare the proportion in which the iodine exists in an ioduretted bath, with the dose contained by the other preparations of which we have spoken, the energy of the baths will appear much more surprising. The quantity, compared with that of the mineral water for drinking, is only as one-third; compared with that for bathing the eyes, nose, and lips, it is little more than a seventh, ninth, or eleventh. Relatively with the solution which I mix with the cataplasms, or which I apply alone, to produce rubefaction in certain conditions of scrofula, it is only 1-640th. On these data, who would, *à priori*, have imagined that nine-tenths of a grain to the quart of water could have produced so decided an effect on the surface of the body? Nevertheless, such was the effect that I have not been able to resume the first formula, and that I have been obliged to substitute for it two others of lower strength; the first of these contains five sixths, the second four-sixths, of the original quantities. Except under particular circumstances, I commence with the former.” 60.

The author proceeds to point out the difference between hydriodate of potash and iodine in ioduretted baths. The *former* he only considers as a solvent of the *latter*, and in nowise participating in the therapeutic agency of the ioduretted baths. He has employed the hydriodate alone, and gradu-

* “ I have prescribed this ioduretted liquor for the past nine or ten months, to be added in sufficient quantity to poultices of linseed-meal, which I have applied to excessive growths, and scrofulous caries.

It serves equally for local baths to the hands, feet, chin, &c., by adding a certain quantity of it to the necessary proportion of water.

It is also very useful for touching certain surfaces which require excitement, especially palpebral ophthalmia, ozaena, ulcers, and the extensive surfaces in the corrosive or esthiomenic form of the disease.

In the cases where I found it necessary to touch more deeply I used a formula composed of six drachms of iodine and four of hydriodate of potash, dissolved in the smallest possible quantity of fluid.

I no longer employ any other mode of cauterisation for any case of scrofula; I have particularly applied it to the edges of the esthiomenic kind when it appears spreading, and also to a particular kind of pustules which remain insulated by the cure of other adjoining pustules, and which, unless their defective mode of vitality be altered, are exceedingly tedious in their cure.—AUTHOR'S NOTE.”

ally increased its quantity to three ounces. He also employed the iodine, in the proportion of three drachms to each bath. Lastly, he tried the effects of the mixed solution of the two. He subjoins the names of seven patients on whom the experiments were made, together with a summary of their diseases. These cases and experiments we cannot analyse, and they are too numerous to insert in an extract. We shall, therefore, give the summary or conclusions to which the author came.

" 1. The hydriodate of potash has scarcely any action whatever in the dose of three ounces to each bath.

2. Iodine should be regarded as the active principle of the baths.

3. The proportion of iodine should generally be from two to three drachms a bath, and very seldom beyond that.

4. Pure or simple iodine is not completely soluble in a bath; and in that case, its action being unequal, may give rise to local accidents; and it may also be deficient in its general action on the economy.

5. Iodine previously dissolved in alcohol does not continue in a state of solution when diluted with the bath, and it moreover produces olfactory phenomena, which may proceed to a species of drunkenness, or even to decided and durable cerebral congestion.

6. The most certain mode of preparation is the preliminary solution of the iodine in the hydriodate of potash.

The efficacy of ioduretted baths in scrofulous diseases is, I believe, already demonstrated by the consequences which naturally flow from the notions I have published on the use of iodine in these diseases. But besides their general utility, these baths still offer peculiar advantages—that of a substitute for the internal treatment, the doses in which may be diminished to different degrees according to the necessity of the case, and that of affording us a mighty auxiliary in certain cases of scrofula, which the internal and external modes of treatment hitherto known, have only altered in the most tedious manner." 76.

This part of the work is terminated by some narratives of cases, to which we beg to direct the attention of practitioners.

PART III.

ON THE TREATMENT OF SCROFULOUS DISEASES BY IODINE.

This memoir is dated the 31st of May, 1831; and, after stating that he had continued his experiments and observations at the Hôpital St. Louis with increased success, he had thought it proper not to narrate cases on his own authority alone, but to solicit the Academy of Sciences to appoint a committee of examination. Messrs. Dumeril and Magendie having been accordingly appointed, they visited the hospital, and after mature deliberation and reiterated observation, reported as follows:—

" By the solicitation of M. Lugol, the Academy has appointed a commission to visit the Hôpital St. Louis, and there investigate the alleged advantages produced by iodine in the cure of the most serious scrofulous diseases. M. Dumeril and I having been entrusted with this honourable office, we proceed to lay before you the result of our inquiries.

The Academy is already acquainted, from our previous report on this subject, with the success of M. Lugol's practice; a success so remarkable and valuable, that a disease of the utmost prevalence, especially among the poor, and formerly of such protracted and difficult treatment, that it is excluded from our hospitals

by still-existing regulations, has now become curable in a limited period, and by means of trifling expense; and thus the numerous paupers afflicted with it, now have a right to be admitted into the hospitals, and treated as ordinary cases.

The new facts which on the present occasion your committee has verified, are such as to remove every doubt on this subject. Not only have we witnessed the cure of scrofula in the first and second degree, but we have also seen the successful treatment of the disease in its most aggravated forms.

Deep-seated alterations of the glands and various other organs, serious lesions of the bones and their principal articulations, accompanied by those general symptoms which forebode a speedy death, have been perfectly cured, in great numbers of cases, in the space of a few months, leaving the patients in the best possible state, and free from every vestige of the malady except the ineffaceable scars it had originally effected. Moreover, these results are rendered still more valuable by the fact that the majority of cases subjected to M. Lugol's practice were, previously, in a desperate state, and only admitted into his wards as deplorable examples of the ravages of an irremediable disease. Among the unfortunate persons thus afflicted are frequently seen some whose mutilations are truly frightful. Before the discovery of iodine, they were all devoted to inevitable destruction, but since the introduction of that remedy and of bromine into therapeutics, one of your committee has had the happy satisfaction of restoring to life and comfortable existence many of those cases hitherto deemed of an incurable kind. It may not be superfluous to add that these cures have been as rapid as unexpected.

We shall not here enter upon an analysis of the individual facts submitted to our examination and authentication by M. Lugol. We have added some to this report, but they are not suited to be read to this assembly, for pictures so melancholy, without promoting the interests of science, could not fail to be disagreeable—one remark is nevertheless essential. In cases of tumours of the articulations, with caries or other alterations of the bony tissue, instead of recommending absolute rest, according to the general practice of surgery, M. Lugol includes regular exercise in his remedial measures. The cases of this kind which he has shown us leave no doubt of the advantage to be obtained in following this departure from the general rule.

We have already said, in our preceding report, that M. Lugol does not pretend to the discovery of the utility of iodine in scrofulous diseases; but from the great number of cures he has obtained—from the zeal and perseverance with which he pursues his researches; from the light he has thrown on the varied effects of the different préparations of iodine, internally and externally administered, it is manifest that he has contributed largely to the advance of medical science. And as, moreover, he has the wisdom to shun all idle and profitless speculations, the uselessness of which constitutes but their least inconvenience, we have the honour to propose that M. Lugol's researches receive your approbation, and that he be requested to continue to prosecute inquiries fraught with so much value to mankind.

DUMERIL.
MAGENDIE, Reporter." 88.

The author then proceeds to a detail of numerous cases, arranged under five distinct heads, viz. tubercular scrofula—scrofula of the mucous membranes, especially ophthalmia—cutaneous scrofula—scrofula of the cellular tissue—scrofula of the bones. To give any thing like an analysis of these cases would far exceed our limits; and yet we are loth to pass them entirely over in our Journal. We shall therefore select a case from each of the divisions above-mentioned, as specimens.

I. SCROFULOUS TUBERCLES.

CASE I.—“*Ulcerated Tubercles of the Neck at each side—Deep Alterations of the Skin—Ophthalmia of the Right Eye—Copious Epiphora—Seven Months’ Iodine Treatment—Cure.*

Philippe Jean Duport, shoemaker, aged 19, was admitted on the 6th May, 1829. At each side of the neck, from the upper extremity of the sterno-cleido-mastoid muscle to the back of the chin, there existed a great number of ulcerated tubercles, and the cutaneous tissue was also much diseased. The tubercles first appeared when he was 15 years old, in the Spring. Every year since, at the same season, additional tubercles appeared and the old ones increased in size. Ulceration supervened about three months after their first appearance. There was also a fluctuating tumour on the top of the sternum, and another, of hard consistence and about half the size of a nut, before the right masseter muscle. Both these were but of two months’ duration. The ulcers all looked very badly, and were covered with thick grey crusts, which were occasionally separated by the discharge from the subjacent ulcers.

I may here remark, that scrofulous pus does not give rise to incrustations, so that those formed in this instance depended on the pus proceeding from the surrounding skin,* and they were detached almost as soon as formed, by the abundance of the tubercular discharge. The separation of the crusts in this case was accelerated by the slightest motion of the neck, and, by giving rise to trifling local hemorrhages, increased the hideous aspect of the patient on his first admission.

At seven years of age he had a fall, six months after which an immense abscess formed in the calf of the left leg, which would have been amputated at the Hôpital des Enfants, had not M. Jadelot fortunately opposed the operation. For this abscess he was six months confined to bed, and six months more during convalescence unable to walk. While the cellular, and perhaps the osseous, tissue was thus deeply affected, ophthalmia attacked both eyes, and continued for five or six months. At 18, during the active growth of the tubercles, ophthalmia of the left eye again occurred, which lasted four months and returned again two months before his admission. For many years he was subject to copious epiphora at both sides. The cause of the disease could not be traced to any hereditary predisposition; his parents were young and healthy, and his brothers free from any scrofulous affection. He followed his trade in Paris for a year in the Rue de Porton ou Marais, in a back room on the ground floor, where the sun’s rays never entered. He also slept in this room. According to the custom of authors this would have been deemed a sufficient cause of the disease, but a more rigorous analysis of the case shows that the locality only acted as an occasional cause in its development of the predisposition to scrofula already inherent in this individual. The chronic abscess and the ophthalmia occurred while the patient was but a child, and lived with his parents in sufficiently comfortable circumstances, and not exposed to moist air. Besides, after the first eruption of the cervical tumours the patient left Paris and returned to his native place, where, though his circumstances and abode were favourable to his recovery, the disease nevertheless proceeded with scarcely diminished violence. Had moisture been the cause, when the patient was removed from its operation, the effects might reasonably have been expected to disappear.

1st August, 1829.—After twenty-six days’ treatment with the ointment containing the proto-ioduret of mercury, and with the ioduretted mineral water, the tubercular ulcers were cicatrized, and tubercular matter was felt no longer in

* “In a state of common inflammation.”—TRANSLATOR.

any situation, excepting the two swellings which last appeared, and over which the cicatrices were less firm and healthy than in the other places. During the first month of the treatment the suppuration was very profuse; and for a period of nearly three months the local action of the iodine was most acute, causing severe pricking pains for two or three hours morning and evening.

16th October.—For more than two months the patient was only dressed once daily. No local suppuration or tubercular incrustations; the cicatrices of the two recent ulcers not yet sufficiently healthy. The iodine had by this time lost nearly all its local power.

During more than four months the ioduretted mineral water produced salivation; and from time to time it seemed to occasion one or two additional alvine evacuations daily. Slight diuretic action was also manifested. The appetite, ever good, was not impaired by the remedy. On the 28th February he was dismissed cured. He soon afterwards returned to the hospital in the capacity of a sick servant, and, during the events of July, applied himself with such zeal to the assistance of the wounded that he fell ill of fever and erysipelas of the face and scalp. Under the influence of the ordinary remedies he recovered in three weeks; and though his convalescence was protracted, no relapse of the scrofula took place, an event which was much apprehended.

In three months he obtained a more healthful and easy situation, and quitted the hospital in perfect health." 94.

II. SCROFULOUS OPHTHALMIA.

CASE 2.—“*Purulent Scrofulous Ophthalmia in the most violent Form, and intense Coryza, mitigated in a few Days by active local Treatment with Iodine, and finally cured by the internal and local Method.*

Antoine Cretenet, aet. 16, of diminutive stature, entered the Hôpital St. Louis, on the 4th of May, 1830, for a double purulent ophthalmia and scrofulous coryza of the worst kind. He kept his head bent down and resting on the chest, and his eyes were covered with a triple bandage, in order to avoid the least contact of the light. On examination we found the eyes bathed in pus, and enlarged to an enormous size by the hypertrophy of their soft parts. The eyelids and their circumference were swollen, of an erysipelatous redness of the worst appearance; between their free edges there existed a large red, granulated chord formed by the conjunctiva, which had already acquired a thickness of two or three lines.

The swelling of the soft parts, and the exquisite pain occasioned by the contact of the light, although the eyelids were closed, did not allow us to attempt to open them in order to examine the cornea. We, however, regretted this the less, as we could only learn by the inspection the *degree* of violence of the disease, by which information the nature of the treatment could not be modified.

The nose participated also in the condition of the eyes, and was almost buried in the swelling of the surrounding soft parts. The nasal fossæ were choked with crusts, the alæ nasi were hypertrophied, so that the patient was obliged to breathe exclusively through his mouth. Both these affections were of about 13 months' duration, and their actual state had lasted for eight days. He had previously been affected with ophthalmia several times; had also, laboured under obstinate chilblains, and had had favous pustules on the scalp. His father, a man of weakly constitution, had long suffered from ulcerated legs, and was some years dead. His mother died at 40, having ever been of a delicate and sickly habit. Of two brothers and two sisters, one of each died young, the others were in a state of wretched health, subject to chilblains, and constant swellings and incrustations of the nose and pituitary membrane.

The case appearing very urgent on admission, the acting-surgeon applied a blister to the neck, with mustard-baths to the feet, and a laxative injection. It is, however, notorious that this derivative method has failed to cure purulent

ophthalmia in the practice of the most renowned physicians. It being also well known that this ophthalmia not unfrequently causes the destruction of the eyes in a few days, and from my conviction that the disease was here of a scrofulous nature, I did not hesitate to have immediate recourse to energetic local treatment with iodine. Whenever scrofula exists, iodine must be called in to our assistance.

5th May.—Local baths, ioduretted solution to be injected beneath the eyelids and into the nostrils with a small syringe. As the danger of losing the eyes was imminent, I stationed another patient near Cretenet, to keep the local baths and injections constantly renewed.

7th May.—Pain and suppuration diminished, and the soft parts less impregnated with pus. By slightly opening the eyelids we found the cornea red and swollen.

10th May.—Swelling of the soft parts much decreased, the patient can open his eyelids and support the daylight. The secretion less abundant and not so yellow. He remained several hours without a bandage.

16th May.—The swelling disappeared, and disease reduced to the condition of mild ophthalmia.

27th May.—The patient attended my clinical lectures without a bandage, and surprised every one who had seen him three weeks before in the state I have already described.

Early in June the ophthalmic symptoms reappeared with much violence, a circumstance which I was at first inclined to attribute to the neglect of blisters and other secondary measures, but which a more rigid examination showed me to have arisen from the patient's own neglect of the local remedies prescribed in his treatment. These were therefore resumed with renewed perseverance, and in a few days the relapse was nearly terminated. After the symptoms had abated in violence, the patient commenced the employment of the ioduretted mineral water, and in this, associated with sulphureous baths, he continued for four months." 103.

III. SCROFULA OF THE CUTANEOUS TISSUE.

CASE 3. "Eloi Macaire, æt. 22, born of unknown parents, admitted April 19, 1830. Having been first placed in one of the surgical wards, he was transferred to me by my colleague Dr. Cloquet, who, regarding him as incurable by the ordinary modes of therapeutics, wished to afford me a new opportunity of testing the powers of iodine.

The patient was literally covered with old scars and scrofulous ulcers still in an open state. Both sides of the face and neck were invaded by wide, deep soft ulcers, with soft gelatinised edges, extending from the ears to the chin and the base of the sternum. The surface of this vast ulceration presented irregularities, in which were clearly perceptible the three principal sores of which it was composed. The base of these ulcers was tubercular, and surrounded with indurated cellular tissue, rendering the movements of the lower jaw difficult and painful. The head and cervical vertebrae in fact seemed but to form one piece. The separation of the jaws was so limited that a two-sous piece could not be introduced between the teeth. Mastication was consequently impossible, and the patient could only swallow liquid aliments, and even these with much difficulty and pain.

Behind the middle region of the right sterno-mastoid muscle, there was an oval ulcer two inches long, with a tubercular base. Above the humeral extremity of the right clavicle was a tumour larger than the closed hand, communicating a sense of fluctuation, passing under the clavicle and projecting on the chest. The unity of the abscess was proved readily by pressure above and below the clavicle.

Beneath this cyst a bag-shaped ulcer three inches long extended obliquely from the left towards the xyphoid cartilage. This was the primary ulcer which had existed since the age of three years, and had never been healed. The long duration and aspect of this sore, and especially its resistance to the numerous remedies tried for its relief, led to the belief that it was kept up by the caries of the ribs and sternum, and had induced several surgeons to propose the trepanning of these bones.

To conclude this catalogue of ulcerations, the right axilla was occupied by a tubercular tumour presenting two ovoid ulcers placed one above the other, the inferior advancing rather to the front of the chest. These two ulcers had existed since the patient was nine years old. Those of the face and neck were but of four months' duration, and the indolent clavicular abscess had commenced but two months before the patient's admission into the Hôpital St. Louis. The symptoms underwent an annual exacerbation in June, and the suppuration was then much increased.

The abdominal parietes, the lower part of the left side of the chest, the neck and limbs, presented numerous scars of the worst character.

Macaire had passed almost his whole life in different hospitals and asylums. Having exhausted all the resources of the first establishment he was received into, he passed five months in the Civil Hospital of Lisle, without the slightest advantage. The organic lesions, already so numerous and so severe, and which had produced great debility and emaciation, were but too effectually assisted by the deep moral dejection of this unhappy young man, who since his birth had only experienced the most perfect state of disease, pain, misery, and destitution.

May 12, 1830. Ioduretted treatment. The sub-clavicular abscess was punctured, and there escaped a quantity of pus, or rather of softened tubercular matter, readily recognizable by its purulent and cheesy aspect. A solution of iodine was injected into the cyst and allowed to remain therein some minutes. The ulcers were dressed with charpie, strongly charged with the proto-ioduret of mercury. He was placed also on the use of the ioduretted mineral water, and he was ordered three sulphureous baths weekly.

26. Parietes of the abscess adherent; generally improved.

June 15. Ulcers of the face and neck cicatrized. The only remaining sore was that corresponding to the middle region of the sterno-mastoid muscle. The thoracic and axillary ulcers were replaced by well-conditioned scars. For three weeks he had recovered the free movements of his head and jaws, of which latter circumstance he availed himself with much pleasure.

July 10. Respiration embarrassed, cough, diminished appetite, sterno-mastoid ulcer suppurates pretty well. I had retarded the cure of this ulcer for some time, regarding it as a natural and beneficial issue. The analogy of these symptoms to those witnessed in the case of Jarry, decided me to use the same treatment, and it was attended with equal success. In this case also the touching of the ulcers, in the second fortnight of their treatment, with the concentrated solution of iodine, was attended with such striking local improvement, that it was perfectly visible from day to day, so that I was obliged to restrain it very soon, lest the sudden suppression of the ulcers should give rise to any dangerous effects.

25. Appetite good, he sleeps well, and feels happy. His only remaining ulcer was dressed once daily with the ointment of the proto-ioduret of mercury; his daily dose of iodine in solution was three quarters of a grain. The cicatrices were touched twice a week with the rubefacient solution, or caustic iodine, in order to diminish their redness, smoothness, and prominence.

October 25. In every respect as well as possible. The cicatrices were excellent, and no longer could convey any notion of the disease from which they resulted. Up to this time the local and internal treatment had been persisted in. The last ulcer was now healed, or very nearly so, its re-opening being encouraged from time to time for reasons already specified.

Dec. 31. Local treatment neglected for two months. The mineral water was continued in order to confirm the cure. No relapse has since taken place, and every thing seems to promise permanent good health." 111.

IV. SCROFULA OF THE CELLULAR TISSUE.

CASE 4. "Victor Auguste Dubois, joiner, aged 18, admitted into the Hôpital St. Louis, 24th August, 1830. His constitution appeared to be soft and weak; his skin very white, but scattered over with red spots; his hair was red, his chest narrow, and his respiration habitually impeded; his father and mother had not, as far as we could learn, been affected with scrofula, but of eight brothers and sisters four were manifestly tainted with that disease. Since infancy he had been afflicted with impetigo of the scalp and obstinate ophthalmia. Having come to Paris at the age of 16 he was attacked with chilblains, which rendered him lame of the right foot. At 18, after having been chilled, he experienced a dull pain under the right angle of the lower jaw, where an enormous abscess shortly formed, the progress of which was much accelerated after the application of ten leeches.

Eight days after this I saw the patient. The right cervical region was completely occupied by a knotty hard tumour. The superjacent skin was not altered in colour, there was no local heat. The tumour pressed most painfully on the subjacent parts, which it displaced considerably, although it projected externally to the volume of both hands. The head was thrown towards the left shoulder; the skin was extended and painful, though unyielding to the touch; the œsophagus and trachea were so compressed that respiration and deglutition were greatly embarrassed, and the patient could consequently swallow nothing more solid than bouilli.

Treatment. Frictions morning and evening, with the ointment of the protoioduret of mercury; ioduretted poultices after the frictions; mineral water for internal use; two or three sulphureous baths weekly.

9th September.—Tumour punctured where the skin seemed thinnest, &c. A quart of pus, mixed with albuminous flakes, was discharged. An ioduretted solution was injected into the empty cyst. Immediately after the puncture, the effects of the under-compression disappeared, and the patient swallowed and breathed without difficulty.

20th September.—Upper part of the opening cicatrized. Another puncture was required. The discharge having become crusty, the edges of the openings were thrice or four times touched with the caustic iodine, and the patient left the hospital cured on the 9th October, with no sequel of the disease but a slight hardness of the parietes of the cyst, which had contracted adhesion to the cellular tissue beneath." 117.

V. SCROFULA OF THE BONES.

CASE 5.—"White Swelling of the Right Knee—three Fistulous Ulcers—Hyper trophy and Induration of the Soft Parts of the Internal Half of the Thigh—Cure in Three Months.

Louis Nicolas Irdot, æt. 26, carter, of small stature and sufficiently robust constitution, was admitted into the Hôpital St. Louis, Salle St. Jean, on the 24th March, 1830. His father, a street-porter, with the exception of tender eyes and occasional ophthalmia, enjoyed good health; his mother also was free from habitual disease. Of fourteen children, eleven died in infancy; there remained a female, æt. 30, in good health, a brother, æt. 14, of weakly constitution, and the third, the subject of present notice. From his infancy he presented symptoms of scrofula; he had been harrassed with chilblains and indispositions

of every kind, aggravated by deprivations and mendicity during his youth. At 15, he laboured at country work to the decided improvement of his health. At 22, after having lain on the ground while in a state of profuse perspiration, he experienced pains and swellings in both knees. This attack lasted four months. Two years after it returned without evident cause. It yielded readily in the left knee, but was aggravated proportionately in the right, which had been eighteen months affected when we saw him for the first time.

The right lower extremity was then disfigured by a hard fusiform tumour occupying the lower half of the thigh and the knee. At each side of the joint was a fistulous triangle. The soft parts in general were indurated, and approaching to the adipocirous state observed as a sequel to white swelling of the knee. The periosteum, and probably the femur, were enlarged, but the fistulous canals did not terminate on any carious surface. The leg was flexed on the thigh at a very obtuse angle, and its complete extension was impracticable. At the external surface of the thigh, close beneath the great trochanter, there were numerous cicatrices, which had long been fistulous, like those still existing at each side of the knee. The lymphatic ganglia of the right groin were slightly swelled, but there were no tubercles in any other part of the body.

When the iodine treatment was commenced the patient had been eighteen months bed-ridden. Sulphureous baths were also ordered, and he was obliged to take moderate exercise in the hospital walking-grounds. This method was attended with the most beneficial and rapid results. In six weeks he could walk with facility, and in three months he was cured.

"The iodine practice was followed for six weeks after his cure, when he left the hospital in excellent health and spirits." 135.

The above are sufficient specimens of these cases, which have been selected rather for their brevity than for any other reason—certainly not on account of their exhibiting more the success of the remedy than the others which are passed over.

EXERCISE IN WHITE SWELLING.

There is a chapter on the above subject, which the translator has thought it necessary to condense considerably. As this condensation occupies little more than a page of the work, we shall here quote it.

"It is unnecessary to call attention to that part of the treatment in the preceding cases, by which the ordinary doctrines and practice of medicine were contradicted—patients afflicted with white swelling of the ankle, knee, or hip-joints, being directed to walk in the ward or open air during the entire course of the iodine treatment.

I may venture, nevertheless, to solicit the notice of practitioners to the results of my general experience, in which I never observed any accident or inconvenience to result from this innovation; of seventy-six scrofulous patients at present in my wards (30th April, 1831) there are thirty-two who, if treated according to the too general custom, would be restricted to absolute confinement to bed. Under my direction they walk daily in the hospital promenade, in the same manner as the different individuals afflicted with other forms of the malady.

The study of scrofula, as regards its causes and diagnosis, denotes that this disease has for its general character and original weakness which arrests the development of organs, but which renders them subsequently subject to a sudden and exaggerated increase. Rest has ever been regarded as a debilitating agent; it is the ordinary associate of all antiphlogistic systems of treatment. The most vigorous and robust constitution would inevitably be weakened, and brought to a state of etiolation by long-continued repose. If rest thus debilitates

the vigorous, still more should an invalid, of primary weak constitution, be enfeebled by its operation, and his malady proportionately increased.*

But the matter is not one of argument alone ; visit those patients confined to bed for six months, and on a debilitating regimen. They are pale, emaciated, weak, and depressed. I admit that the motion of a diseased joint is attended with some inconvenience, but the advantages derived from it are great beyond all proportion. In fine, for three years that I have followed this method, I have never been induced to change it, or even modify it, but for a transitory period in some unusual cases." 150.

We wish the ingenious translator had favoured us with his explanation of the utility of exercise in white swelling. For our own parts we are much disposed to agree with M. Lugol, and attribute the improvement to the air and exercise taken daily in the promenade of the hospital, instead of passing day and night in the tainted atmosphere of the ward, without the movement of a muscle to promote circulation or digestion—and without the advantage of any exhilaration from the association of convalescents in a public walk.

The third chapter of this division of the work, is on the mode of prescribing the preparations of iodine. In his first memoir he objected to the tincture and syrup for internal use, in consequence of the precipitation which he supposes to take place in the stomach. He therefore preferred the *perfect* solution in distilled water. But this *perfect* solution requires a large quantity of water, which is a great inconvenience in prescription. Another disadvantage is the decomposition of the solution when exposed to the light, and its deterioration thereby. For some time past, therefore, M. Lugol has dissolved the iodine in a solution of potash. We subjoin a tabular view of the solutions he is now in the habit of using, graduated in three different proportions, so that the iodine may be given internally in the progressive dose of half a grain, three-fourths of a grain, or four-fifths of one daily.

" IODURETTED MINERAL WATER.

	No. 1.	No. 2.	No. 3.
B. Iodine.....	gr. $\frac{3}{4}$	gr. i. ..	gr. $\frac{1}{4}$
Hydriodate of Potash	gr. $1\frac{1}{2}$	gr. ij ..	gr. $\frac{ij}{2}$
Distilled water.	$\frac{3}{viij}$	$\frac{3}{viij}$..	$\frac{3}{viij}$ "

This solution is perfectly transparent, of a beautiful orange colour, and keeps for a considerable time. Children will take it readily when mixed with a little sugar, which should be added only at the time of exhibition. M. L. commences the treatment with half a grain of iodine—that is two-thirds of the mixture No. 1, per diem. In the second fortnight he gives the entire of this formula, and during the fourth fortnight, he gives a grain of iodine daily, till the conclusion of the trial.

" Another and advantageous form of preparing this mineral water on a larger scale is, by first making a concentrated solution of iodine in hydriodate of potash, and then diluting it with a sufficient proportion of water ; thus,

* " M. Lugol will pardon me for remarking here, that I consider his facts much more conclusive than his arguments on the point in question. That exercise has effected much good in the cases before us I entertain no doubt ; but that M. Lugol has satisfactorily accounted for the cause of the improvement I must be permitted to deny."—TRANSLATOR'S NOTE.

R. Iodine	Đij.
Hydriodate of potash.....	Đij.
Distilled water	žvij.

This solution contains one twenty-fourth of iodine; poured into 16 pounds of distilled water, it forms thirty-two bottles of eight ounces of the mineral water No. 1. It is easy to understand that by diminishing the distilled water one-fourth we compose No. 2, and by using three-fifths of the quantity of water we obtain No. 3." 167.

The concentrated solution above-described serves for exhibition in drops once or twice a day—a mode of prescription very useful in private practice. We may commence with six drops twice a day, in a little water, gradually increasing the dose to 30 or 36 drops. Every week the dose should be augmented by two or three drops. The above is for the adult, of course.

In the formula for ioduretted ointment he has made little change—only a trifling reduction in the quantity of iodine in No. 1, in order to render it more suitable to tender skins. The prescription now stands thus:—iodine, 12 grains—hydriodate of potash, Điv.—hog's lard, žij., *misce*. These ointments do not keep well. The following is the form which M. Lugol gives for a combination of iodine with mercury, under the term—

OINTMENT OF PROTO-IODURET OF MERCURY.

R. Proto-ioduret of mercury....	Đij. . .	Đijj. . .	Điv.
Fresh lard	žij. . .	žij. . .	žij.*

This ointment is of a canary yellow colour, and the author was first led to its use by the syphilitic aspect of the esthiomeric form of scrofula, where its good effects were so conspicuous that he extended its use to all cases of external scrofulous disease. This ointment causes little or no pain in ordinary cases.

RUBEFACIENT SOLUTION OF IODINE.

R. Iodine.....	živ.
Hydriodate of potash	ži.
Distilled water	žvij.

This solution should be kept in a glass-stopped bottle, as it rapidly corrodes cork. It is very useful in cases where scrofulous surfaces require stronger excitement than usual—for example, the eye-lids and angles of the eye in obstinate chronic ophthalmia, coryza, and other forms of scrofulous disease in the nasal fossæ. It is most conveniently applied by means of pledges of fine charpie. M. L. avers that its application to cicatrices has rendered them smoother and less livid. Local baths for the hands, arms, chin, &c. may be easily prepared, by adding the above solution to a sufficient quantity of warm water, taking care to employ wooden boxes for that purpose. Cataplasms may also be made with this solution and linseed-meal. The author uses this form in cases of hard tubercles, which obstinately resist other applications.

*. The composition of the proto-ioduret of mercury will be given a little farther on.

CAUSTIC IODINE.

The most concentrated solution of iodine which can be made, is composed of one part of water, one part of the hydriodate of potash, and one part and a half of iodine. This solution induces small scars on the parts touched, similar to that produced by the nitrate of silver. In many cases it is more successful than friction—and in all, it may be advantageously associated with frictions. He touches excessive granulations on the eye-lids and nasal fossæ with the solution—and also the red hypertrophied skin surrounding certain scrofulous ulcers and tubercles.

"The celerity, in short, with which it improves the appearance of the soft and fungous tissues in these cases almost surpasses imagination : sometimes indeed, the ulcers are healed too soon ; that is, closing before a sufficient change is worked on the general constitution. In the esthiomenic scrofula the pustules are touched with the caustic iodine, the rubefacient solution having been used a short time previously. The application may be made twice or thrice a week, sometimes even daily, when the surfaces are extensive, and can only be touched in minute proportions at a time." 176.

We must now notice the Appendix by the Translator. In this, he has made a selection from the French periodicals, of the cases published within the last six months—some of them valuable only as corroborating M. Lugol's statements—others, from the novel and apparently efficacious combinations of the remedy with other powerful therapeutic agents. The chemical history of the compounds of iodine has lately received some curious and important additions, in the labours of M. Caventon and others. These are taken advantage of by the translator. In the first section of this appendix the translator has brought forward a succinct analysis of cases treated with simple iodine, or hydriodate of potash and opium—some with ioduret of mercury—and others with the ioduret of lead. In the second section, he has described fully the chemical properties of iodine, hydriodate of potash, and the metallic iodurets just mentioned, including an account of the adulterations to which they are commonly subjected. The cases we are unable to notice. It appears from them that the combination of opium with iodine has often been highly beneficial—a fact which we can readily believe, knowing, as we do, how much the soothing influence of opium assists the virtues of many other medicines, especially mercury.

THERAPEUTIC EFFECTS OF THE IODURET OF LEAD.

"The ioduret of lead appears to be by far the most interesting of any of the metallic compounds of iodine yet tried in practical medicine. Its introduction is but of very recent date, and is due to the researches of two Parisian physicians of great promise, MM. COTTEREAU and VERDET DE LISLE. Having witnessed the singular rapidity with which absorption took place in a tumour to which a soap accidentally containing the ioduret of lead was applied, they immediately commenced an extensive investigation into the therapeutic properties of the compound, and have obtained results, certainly, of no trivial importance. The following passage, quoted from a letter published in one of the French periodicals, by MM. Cottereau and De Lisle, leads us to expect much from the repetition of clinical experiments on this subject :—

'We thank you for calling the attention of your readers to this new medicine ;

for we have ascertained, in an incontrovertible manner, that of all the preparations of iodine this is the most efficacious, and promises the most prompt and constant action. It is, moreover, free from the inconvenience of creating the cutaneous inflammation which the simple iodine and hydriodates occasion. The proofs of this we shall afford by publishing the cases we have collected, as well in Paris as in the hospitals and departments,—cases, the majority of which had previously been ineffectually submitted to the action of iodine in other forms. Many other practitioners, who have prescribed the remedy at our desire, participate fully in these opinions.'—*Gazette des Hôpitaux*, 30th June, 1831.

Extensive trials of this substance have been made at the Hôpital des Enfants by M. Guersent, and at La Pitié by M. Velpeau. M. Guersent has not yet published any account of his researches; but Dr. Haas states, in the *Journal Hebdomadaire*, No. 31, that 'he has already witnessed the complete and rapid success of the ioduret of lead, in several cases treated by M. Guersent at the Hôpital des Enfants.' I subjoin an outline of some cases treated by M. Velpeau, at La Pitié, and mentioned by him in his clinical lectures." 206.

The chemical properties of iodine and hydriodate of potash being sufficiently explained in the Dublin Pharmacopœia, where they are officinal, and in various elementary works, the translator dwells chiefly on the means by which their purity may be ascertained, and for his remarks on this important subject, we must refer to the work itself. Happily, iodine is now reduced in price to one shilling and sixpence, or two shillings per ounce, which will tend to check the temptation to adulterate it. But the hydriodate of potash, the translator avers, is so variously and ingeniously sophisticated, that the practitioner who is not aware of their existence and the mode of detection, need never attempt to place a patient under Lugol's treatment, with any reasonable prospect of success! This is a melancholy reflection, but we fear it is founded in too much truth. It appears that chemists and druggists are in the constant habit of mixing large proportions of muriate of soda, carbonate of potash, &c. with hydriodate of potash. One specimen which Dr. O. S. examined contained 64 per cent. of the carbonates alone. We must endeavour to make room for the following extract.

HYDRIODATE OF POTASH.

PURE.

1. Dissolves iodine in the cold, forming an active ioduretted hydriodate of potash for internal use.
2. When warmed with iodine and diluted with water forms an *active* bath, which excites powerful local action.
3. Affords by double decomposition pure iodurets of lead or mercury for internal or external use.

IMPURE.

1. Does not dissolve iodine in the cold.
2. When warmed with free iodine converts it into the hydriodate of potash, a compound proved by Lugol to be nearly inert as a local or general bath.
3. Affords by double decomposition carbonates, chlorides, and sulphates of lead or mercury, compounds either inert or opposed in their action to the iodurets of these metals.

Conclusion.

When pure, a valuable medicinal and pharmaceutical agent.

Conclusion.

Impure, possessed of no medicinal or pharmaceutical value whatever.

IODURET OF LEAD.

" This compound is prepared by adding a solution of 100 parts of the hydriodate of potash to a solution of 75 parts of the acetate of lead. In the preceding section I have given a diagram illustrative of the mutual decomposition which takes place.

The ioduret of lead is a fine yellow powder, partially soluble in acetic acid and in alcohol ; insoluble in cold, but perfectly soluble in hot water, from which it crystallizes in fine hexagonal plates. One hundred parts of this compound consists of 54.9. iodine, 45.1. lead. The discovery of the solubility of the ioduret of lead was first made by M. Polydore Boullay in 1827. It then, however, attracted but little attention ; and was completely forgotten when M. Caventon again casually noticed the circumstance, and placed it prominently before the public.

The ioduret of lead has very recently been subjected to an elaborate analysis by M. Henry (fils), ' *Journal de Pharmacie*, Mai 1831,' and 100 parts found to consist of iodine 54.9. lead 45.1.

When the ioduret of lead precipitated in the cold is acted on by boiling water, it is dissolved with the exception of a minute whitish grey residuum, which appears to consist of an ioduret of lead with excess of base. Various experiments also show that the composition of the pulverulent ioduret is by no means constant in its nature, occasionally containing free iodine and occasionally an excess of lead. The crystallized product deposited from warm water, should therefore alone be employed for pharmaceutical or medicinal purposes." 215.

IODURETS OF MERCURY.

Iodine, observes the translator, forms two compounds with metallic mercury—the first of a fine canary yellow—the second of a beautiful carmine colour. The first of these compounds is prepared by adding a solution of the hydriodate of potash to a solution of *proto* salt of mercury. The second is made by adding the hydriodate to a *per* salt of the same metal.

" In the preparation of the proto-ioduret by double decomposition, great care is necessary that the salt of mercury should contain no per-oxide, otherwise a decto-ioduret would be formed, a compound analogous in its properties to the bichloride or corrosive sublimate. By observing the following directions, however, the proto-ioduret will be obtained perfectly pure.

Dissolve, without applying heat, a sufficient quantity of pure mercury in one part of nitric acid diluted with three parts of distilled water, and add mercury until no more be dissolved. A proto-nitrate of mercury is thus formed which frequently shoots into a mass of white crystals. Any excess of metallic mercury is to be separated by inclining the vessel and allowing it to run off, the solution containing the crystals is then to be diluted with distilled water until they are perfectly dissolved ; a pure proto-nitrate of mercury is thus obtained, the formation of the per-nitrate being only occasioned by the application of heat and the use of too concentrated nitric acid.

Hydriodate of potash is to be added to this solution as long as any precipitate occurs. Filtration is then to be performed, the matter remaining on the filter to be well washed with distilled water, and dried in a water bath. As thus prepared, the proto-ioduret of mercury is a fine yellow powder, quite insoluble in water at any temperature." 217.

After having given so ample an analysis of this volume, it is hardly necessary to say that the subject is so exceedingly important that no medical man should fail to place the work in his library for constant reference and study.

It is decidedly the most valuable monograph which has issued from the press for many years—being entirely practical, and founded on accurate, as well as authentic clinical observations and experiments. The numerous quotations which we have made, in the course of this article, will enable every English reader to judge of the manner and construction of the English version. The translation is singularly faithful, though not always strictly literal ; and, with very few exceptions, it reads as fluently and as gracefully, as a studied original composition. The style befits a scientific subject—clear, perspicuous, unaffected, yet energetic. We need say no more.

X.

CHOLERA AT PORT-GLASGOW. By *John Marshall, M.D.* 8vo.
pp. 80, 1831.

PARLIAMENTARY reform has tended to check the cholera-phobia in this country, during the last four or five months ; but still the terror broke out occasionally, and attracted, from time to time, the attention of the public. The steady approach of the enemy will probably re-excite the panic, especially during the prorogation of Parliament, when the political mania may experience a remission of its violence. Notwithstanding the regular advances which this terrible malady has hitherto made, from East to West, we continue to indulge our hopes and our expectations that the disease, if it reach our shores, will come in a mitigated form, or at all events, be met by more stubborn subjects, and a “tougher opposition,” than it has encountered on the other side of LA MANCHE.

The author of the pamphlet before us informs us that he did not seek publicity, in the present case, but that it was thrust upon him, as the Bard of Avon says is sometimes the case with honours of a different kind. Having attended some cases of cholera in Glasgow, which appeared to be different from the ordinary disease of this country, he felt it to be his duty to communicate the results of his observations to the Privy Council—and these communications were thought to be of so much importance, that a medical officer was dispatched to the North to investigate the subject. Drs. Daun and Badinach were the examinators, on this occasion ; and it appears that the former of these gentlemen reported to the Privy Council, that the cases in question were not the cholera of India, but the disease of this country. Some attacks were made on Dr. Marshall in one of the Glasgow papers, insinuating that he had caused needless alarm, and that he shewed some ignorance or inattention in the matter. To free himself from what he considered ungenerous and unjust aspersions on his professional character, Dr. Marshall has thought it necessary to publish the cases, in order that the profession might be able to judge whether or not he had just cause for alarm, and therefore good grounds for communicating with the Privy Council. We shall not enter into the preliminary discussion of the author respecting the identity or non-identity of the cholera of India and that of this country. We

shall give the first case, as it is that which made such a noise in the newspapers,—the only one that proved fatal—and probably was the cause of the dispatch to the Privy Council.

Case. July 2d, 1831. “JOHN MURRAY, æstat. 25, reported to be a healthy and remarkably temperate man, rather of a slender make and pale complexion, labourer in a sugar-house here; became rather unwell last evening, went to bed early, and about one this morning was seized with purging, accompanied with severe pain of bowels, soon after with retching and vomiting, quickly followed by spasm, or as it is called by the patient, ‘cramps’ of the whole body and limbs, excessive sickness, shivering, and cold perspiration, with coldness of the extremities; what was the nature of these first evacuations could not be ascertained, as he had during the night retired from the house when urged by the calls of nature.

He is reported to have continued in this state till some time in the forenoon, when the purging ceased, and an emetic was ignorantly administered, after the operation of which, he is described to have become worse.

At nine, p.m. I saw him for the first time, and found him labouring under the following symptoms:—retching, instant vomiting of every thing swallowed, excruciating pain of abdomen, not increased by pressure. Has recently evacuated by the bowels matter reported to have ‘resembled half-boiled white of egg.’ Spasm of the whole body and limbs coming on in paroxysms, of which I witnessed several—sense of intolerable heat over the region of the stomach, urgent thirst, pulse almost imperceptible at the wrists, quite so at the temples, surface of the body cold and clammy, skin of a blueish or leaden hue, features collapsed, eyeballs sunk in their sockets, remarkable lividity of countenance.

Warm brandy and water were ordered to be freely given, and five grains of the Pil. Thebaicæ, E. P. every hour while the vomiting and spasms continued. Warm flannels, and bottles with warm water to be applied to the body and extremities, with a sinapisum over the stomach.

3d.—The patient has had a restless night, yet, upon the whole, there is a perceptible amelioration of the urgent symptoms. The intervals of retching and spasms are longer than yesterday, thirst unabated, but what is swallowed less immediately rejected, pulse quick and more distinct at the wrists, heat of body increased, but requiring constant hot applications to keep it up. Has had no stool to-day. Has taken eight of the pills above ordered, containing in all four grains of opium.

Continue hot gruel with brandy, repeat the sinapisum. To have one grain of opium, and three grains of calomel every three hours.

4th.—Considerable re-action has taken place, spasms nearly ceased, the stomach has retained a little gruel and brandy, no evacuation from the bowels, heat of skin more easily sustained, pulse stronger, countenance less ghastly. Owing to the extremely penurious habits of the patient, and the absence of all relations or responsible attendants, I find my prescriptions and directions very ill executed.

To have a lavement administered immediately, and repeated at intervals till the bowels are opened, and to continue the brandy gruel.

Eleven o'clock, p.m.—Considerably worse, constant singultus, extremities cold, spasms gone; two lavements have been administered, first was retained two hours, and came off with the second quite unaltered, said to have been mixed with a whitish matter, which having sunk to the bottom, was not observed till it was being thrown out. Had an evacuation from the bowels about an hour afterwards, of a whitish colour, unmixed with faeces.

Continue hot brandy and water. To have two compound opium pills immediately.

5th—Patient is in every respect worse, singultus constant, is reported to have had, since last report, involuntary evacuation of the bowels of a whitish matter. Died at 5 p.m. No urine had been voided for three days before death.

I never, to my knowledge, saw John Murray till called to him on the evening of the 2d, when it was quite impossible to judge what his personal appearance might have been. From the nature of the work which he performed in the sugar-house, I am certain, however, that he must have been a man of very considerable muscular strength, because no other would have been hired or retained in that particular department.

Much has been said and written about this unfortunate man having been at an ‘Irish wedding,’ and all his sufferings and the disease of which he died, have, humanely, been ascribed to his *supposed* excesses on that occasion. I have taken considerable trouble to obtain the most correct information possible on this subject; and by the most minute inquiries at the master and manager of the sugar-house, and also at his fellow-workmen, I learn that on Monday, 27th June, he was at the marriage of an Irishman, where he got intoxicated. That he was at his work as usual on the morning of Tuesday, 28th, and continued to perform it with all his accustomed ease and alacrity up to seven o’clock on the evening of Friday, 1st of July. Facts which must for ever set aside the fable of the ‘Irish wedding.’

A week after this patient was buried, I was told that an emetic had been exhibited at one or two on the afternoon of July 2. In the course of the enquiries above alluded to, I have learned that one of his companions had procured, from a druggist, six grains of tartrate of antimony, with a printed direction that ‘it should be dissolved in half a pint of water, a table-spoonful of this solution to be given every fifteen minutes, till vomiting takes place.’

It is averred by those who were present, that only a very small portion of it was swallowed, about two o’clock on the morning of July 2. But let us, for the sake of argument, allow that the whole was swallowed at one draught, could these six grains of emetic tartar have produced the morbid symptoms which I witnessed when called to him 19 hours after? We all know that this drug reduces the powers of life in a most extraordinary manner, subduing the outrageous maniac to the helplessness and docility of infancy, producing in such cases the sleep that had long been absent; and we also know, that in *over doses*, (such as that mentioned by Orfila, when an ounce was swallowed,) it produces symptoms highly analogous to those of cholera.* A fact not lost sight of by my friend, H. M.

I am ready to allow, that it may, in the present instance, have added to the debility under which the man laboured; but will any one venture to assert, that it produced deadly sickness, retching, cramp, constant inclination to go to stool, and floods of cold perspiration, *five hours before it was swallowed?*

In the presence of Dr. Daun, I, for the first time, learned from a medical practitioner here, that he had been called to Murray; had visited him before eight o’clock in the morning of July 2, and had prescribed a dose of castor oil and an *anodyne draught, because he considered it to be a case of abdominal visceral inflammation.* But he returned no more to inquire into the progress of the ‘inflammation,’ under this very novel prescription.

To plead in his own defence ‘because another was called in,’ is quite in vain, since thirteen hours elapsed between the two circumstances. I observe by the Russian Reports, given in the Edinburgh Medical Journal for July, 1831, that similar mistakes were made by the Orenburg phy-

* “ Some highly esteemed practitioners in India have advocated the use of antimonial emetics in Cholera.”

sicians when Cholera first appeared there; but I do not observe that any of them left the miserable patients, without advice or assistance, to combat alone the fury and the agony of the disease." 17.

For our own parts, the perusal of the above case has left no other impression on our minds than that it was one of common—perhaps *severe* cholera Britannica, aggravated, nay rendered fatal, by the tartrite of antimony. The man may have taken only a part of the six grains; but a single grain of emetic tartar, exhibited in such a highly irritable state of the stomach, might very well make all the difference between death and recovery. Twenty-four cases are reported by Dr. Marshall, but only this one died—a strong proof that the disease was not of a very fatal character, however judicious (and we acknowledge Dr. Marshall's skill) might be the remedial measures. Calomel, opium, and the warm bath, were the chief measures employed in all these cases—and all, except Murray, recovered.

Dr. Marshall, in his concluding observations, quotes a statement from an aged medical friend of his, Dr. Carmichael, who had practised many years since in India, and which appears to us rather extraordinary. Dr. C. informed our author that, in the Indian cholera, he had *always* observed a "*copious black vomiting.*" Dr. Marshall says that this observation of his aged friend "exactly coincides with the account given by the earlier writers who have described the cholera of India." This does not tally with the accounts from Bontius and Curtis downwards—and we should be disposed to place little reliance on accounts previous to their time, in India at least.

"It has been a general, and hitherto an undisputed remark, that *Cholera in this country has its origin in the too free use of fruit, unripe or otherwise, and also of crude vegetable matter;* and we find it commonly appear about the middle of August, and prevail till the latter end of September.

In the present year it appeared six weeks earlier, and in no one case which I met with, had green vegetables been an article of diet at all. In only three cases had fruit been recently used, and in these cases it was very small in quantity." 72.

We are much surprised at the above remarks; for, in the whole course of our lives, we have hardly met with a practitioner, of the slightest talent or observation, who subscribed to the antiquated and ridiculous notion, that our autumnal cholera was owing to the eating of rife fruit. We might just as well argue, that Summer is owing to the swallows that flock to this country in that season.

We beg to state that we throw not the slightest blame on Dr. Marshall for his report to the Privy Council on the case of Murray—and that we think Dr. Henry Marshall's letter, in the Glasgow Herald, was too sarcastic on his namesake. From all that appears in the document before us, there is no foundation for accusing Dr. M. of propagating the idea, that—"the Russian cholera has arrived at Port-Glasgow on board a ship laden with flax from Riga." Cholera has been much more severe and much more prevalent this last Autumn, in these isles, than usual; and, considering the extent of the cholera-phobia in this country during the Summer, we do not wonder that Dr. Marshall was startled by the fatal case which first occurred to him. We apprehend, however, that the hot water in which he has got immersed by his conscientious report to the Privy Council, will somewhat cool his phi-

lanthropy, and render him more cautious, in future, how he addresses himself to courts and quarantines. Considering that every one now writes with a *steel pen*, there is more affinity between the sword and the "goose-quill" than in the days of Hudibras.

XI.

PRINCIPLES OF LITHOTRITY; OR, A TREATISE ON THE ART OF EXTRACTING THE STONE WITHOUT INCISION. By *Baron Heurteloup*, Doctor of the Faculty of Medicine, Paris. Illustrated with Plates of the Instruments used in Lithotripsy. Octavo, pp. 483. Five Plates. London, 1831.

THE present is a stirring century, an æra pregnant with great events. Men have learned and are learning to think for themselves; to appeal to reason and not fear her answers; to burst the bonds of civil and religious bigotry; and to laugh at childish reverence and pagan adoration for those dicta of their ancestors too often hallowed by the name of wisdom. Man, civilized man, is on the move. In the court, the camp, the city, and the grove, education is working a momentous change in the feelings, the pursuits, the manners, and the minds of those who are submitted to its kindly influence. Civilization is marching on; who can tell where is goal shall be? The political world is the scene of revolution, and, if coming events cast their shadows before, the changes to be will exceed in magnitude the changes that have been. But the overthrow of dynasties, and the alterations effected by reason or by force in the character of national or legal institutions, are equalled by those which we witness in the domains of science and art. In these we see indeed that the schoolmaster is abroad with his grammar and his birch; the first for the quick and the last for the dull. In the profession of the law the work of improvement, nay, of regeneration, is already begun; in the church, reformation is menaced, and perchance the secular arm may smite heavily the servants of the Apostles; in manufactures, in all those arts which, aided by philosophy and the more pure divisions of scientific knowledge, are made to contribute to the necessities, the comforts, and the luxuries of mankind: in these, we say, giant strides towards perfection have been made; in the higher departments of science itself the labourers are many and the harvest is not scant; in fine, we are surrounded by myriads of intellectual beings incessantly occupied in pushing the peaceful conquest of knowledge beyond the limits of her ancient reign—all breathes activity and mental energy: the press, the genius of modern civilization, is in the van; millions are in the ranks; the foes to improvement are few and flying. In our own profession we are far from settled; we are not as we have been, we are not as we shall be. Our institutions are susceptible of improvement, and they will receive it. Each day brings some addition to our stock of knowledge, some fresh mine worked, some new ore found. Diseases are investigated after the inductive method, men of caution and of

ingenuity are busy alike, competition is active, the results are beneficial. We need scarcely particularize what has been done for medicine and surgery in the latter part of the 18th and the 19th century, for they will tell their tale in the annals of our art.

Among the established improvements of our contemporaries we must now begin to rank lithotritry. We are not of the party of those who cling to ancient prejudices, neither do we claim fellowship with the equally unphilosophic sect that embrace every new proposition without a careful and suspicious examination of its pretensions. Their's is a life of incessant disappointment; hopes blasted, prospects blighted, blot each page. When lithotritry was introduced to the notice of the profession, when the capital buzzed with its success in Paris, many were altogether incredulous, and many concluded that the Millennium for the stone was come. Years have passed away, professed lithotritists practise in France, and are established in London, and although the operation is not yet made parcel of the surgeon's education, nor become as it were the common law, yet it is not improbable that it soon may do so. It would yet be premature to pronounce confidently on its ultimate fortune, to declare that it would form the symbol of an important epoch, or pronounce that it would not survive its more immediate originators and advocates. We have not the gift of prophecy, or, if we have, we will not use it, but leave futurity to enlighten itself.

The present work of Baron Heurteloup is somewhat bulky, and we suspect that the Baron has not yet attained that art of condensation which pleases the public better than the printer. Five hundred pages on boring a stone, are well adapted for boring a reader. To say sooth, the Baron is a clumsy book-maker, and has yet to learn the taste of the day. The sages of the Row will smile when we tell them that the preface occupies forty-six pages. Nevertheless there are some observations in this preface not altogether unworthy of attention; and as they require little preface themselves we may introduce them to our readers.

" Whenever a new operation is brought to light, its existence is divided into two distinct periods. During the first of these periods general attention is only fixed on the efficacy of the means considered in an absolute manner; that is to say, independent of all distinctions of method in performing it. Is the operation successful or not? This is naturally the first question; and it is only secondarily that we inform ourselves in what proportion it succeeds. The second period, which is much longer, is that which elapses from the moment when facts have become sufficiently numerous to prove the efficacy, more or less certain, of a means of remedy, up to the period when other means, more perfect and of different origin, supply its place.

It is during this period that the art which has sprung to life from human invention, finds in that inventive faculty the means of improvement, by a continuation of the same process as that to which it owes its birth. It is when all the friends of science recover from the feeling of surprise with which they received the first idea, when they examine it more leisurely, regard it in its true aspect, and free it from all the clogs and impediments which private interests tend to throw in the way of its advancement.

Lithotritry has already passed through the first of these periods, it now begins to accomplish the second; but that it may be enriched, and become as rapidly perfect as it will allow, it is necessary that it should be freed from all the shackles of empiricism, and that the means of justly appreciating the value of

each of the parts which may arise to forward the perfection of the process, should be infallible.

Lithotropy, truly considered in its essential character, and analysed, is but a purely mechanical affair, consisting only in the pulverization of a stone with more or less rapidity and gentleness towards the organ, which leads to the simple conclusion, that in order justly to appreciate the degree of perfection to which it is carried, the action of its agents should be examined independent of all collateral circumstances. This is what has not yet been done.

Hitherto it has been thought right to rest an opinion upon facts alone, without taking into consideration circumstances that might influence them. This, no doubt, was found sufficient, when proving the possibility of a cure by lithotropy was the only object; but now that it is necessary we should know the relative goodness of each of the instruments, more is required. To draw conclusions from the facts alone, is a vicious system, and must inevitably lead to error; for, besides that an author, whoever he may be, is always inclined by the weakness of human nature, to regard a fact which springs from himself, under a favourable aspect, very different in degree to that which he bestows on the property of another; a lithotrophic fact especially has this peculiar inconvenience, that since it *takes place in the dark*, the operator himself may be deceived as to the nature of the observation he offers. The fact then, though simple, may thus undergo transformation, enlargement, fashioning, arranging, &c., till it appears to the eyes of surgeons a supernatural thing, and consequently nearly inimitable.

If, on the other hand, instead of consulting facts, such as they really are, we consider their number without taking note of the particular circumstances in which the practitioners were placed—such as the proportion of patients—the nature of the disease:—the amount of the number will prove a very illogical mode of reasoning with a view to the attainment of the truth.

It must be evident that too many circumstances may interfere to render a correct judgment possible by such means; that formed upon such grounds it must necessarily be false, even when the facts have been given with candour, truth, and especially with such accessory particulars as can alone give them value or render them current in science.” *Preface, xxxii.*

Facts, then, true or false, (as false too many are,) are acknowledged by Baron Heurteloup as insufficient at present to determine the value of lithotropy, and more especially of the different methods of lithotropy. To remedy the deficiency of evidence, the Baron demands a kind of judicial combat, or, at least, a public demonstration, as he calls it, more resembling that ancient mode of deciding the right, than any other with which we are acquainted.

“ By *demonstration*, I mean the application of lithotrophic instruments on vesical calculi, and in the bladder of a cadaver, performed so that those who are appointed by the learned bodies to examine their efficacy, may see what passes in the interior of the organ, and thus appreciate in what degree of perfection the two principal conditions of lithotropy are fulfilled; that is to say, 1st, The absence of all lesion of the walls of the organ; 2dly, The rapid pulverization of the calculus.

I think that a commission chosen to examine and investigate all that relates to lithotropy, after having first compared and examined the means proposed by the different authors for placing the patient, and fixing the instrument while the pulverization is effected, may require them to shew, in the fullest detail, the manner in which they effect the crushing of the stone. They might first desire to see the pulverization effected on stones of different form and size, out of the bladder; and by afterwards placing calculi, varying in the same manner in their form and size in the bladder of a cadaver, they may examine the relative degree in which each of the authors, by means of their instruments, can acquire

a preliminary knowledge of the stone or stones, as regards their shape and volume.*

They might then examine what influence the position of the patient has on the situation of the stone, and see which means of placing the patient is the best adapted to make these positions favourable to the success of the operation.

They can finally examine the instruments proposed by the authors, and require that they should make them act on small spherical stones—large and intermediate spherical calculi—small, middle-sized, and large oval stones—the same different sized flat ones—on a number of small round ones—and finally, on fragments.

To go through this examination, and to put the authors examined in the same situation as when they actually operate, they ought to be required to proceed to the destruction of the stones, without seeing any thing that is going on in the bladder, and without having received any previous information. The examiners placed so as to see and be able to touch the organ, which is fairly displayed, and distended with water, may judge by the bulges which the instrument makes in the posterior walls of the organ, whenever the instrument comes in contact. At each question of the examiner, the surgeon who operates ought to explain what he is doing in the bladder at the moment in which he is questioned; and, if necessary, he ought to permit the bladder to be opened, to verify the accuracy of his description.

The examiners might even make the authors operate ‘dry;’ that is to say, without any water in the bladder, which, thus emptied and opened at its posterior part, would allow them to examine, at leisure, the degree of harmlessness of the instruments for the neck of the bladder, the resources which they afford the surgeon, and finally, the ability which each displays in the double action of seizing the stone and pulverizing it.†

It would be after a report, circumstantial and well authenticated, had been made, in this spirit of analysis, that the authors of the various means to render lithotripsy practicable would be classed, according to their respective claims, and that this branch of surgery not only might increase in its resources, and improve in its results, but be fairly appreciated in its present state.”—*Preface, xxxvi.*

Whether this chivalrous challenge will be accepted we know not, but here we must quit the preface, and say something of the objects and constitution of the work. The aim of the Baron is to describe the instruments which he employs and the method of using them—the examination of the urethra and bladder and the calculi found in them—the circumstances which render the operation of lithotripsy simple, difficult, or inadmissible—and, lastly, to detail some cases in which lithotripsy has been had recourse to. It cannot be supposed that we can analyse this work, or that, if analysis were possible, it would be useful. We must omit altogether the description of the instruments, referring the reader to the work itself and the plates by which it is accompanied. We shall content ourselves with taking as brief notice as may be of the mode of examining the urethra and bladder, the circumstances deserving of attention in choosing or performing the operation of lithotripsy,

* “ It will be understood how necessary this preliminary knowledge is to the lithotritic operator; since the shape and volume of the calculus exercises a powerful influence in his choice of an instrument that shall rapidly destroy the stone.”

† “ As I address myself more especially to the learned bodies of France, I will describe, in my French edition, all the points in lithotripsy which they ought more particularly to examine and dwell upon.”

and shall glance at a few of the cases related at the conclusion of the volume. In adopting this plan, we shall serve our readers, the author, and ourselves.

In some introductory observations, which form a sort of second preface, M. Heurteloup reviews the history of lithotripsy, and treats of things which could not be conveniently treated of elsewhere. Amongst others, he draws a parallel between lithotripsy and lithotomy, which strikes us as exhibiting some of the colouring of a partisan.

" Lithotomy requires to be performed in a favourable season ; lithotripsy may be performed at all times, with equal chance of success : the former requires that the patient should remain in bed for a month or six weeks after the operation, the latter needs no confinement, and often allows the patient to pursue his usual avocations. Lithotomy requires the patient to be kept on a rigid diet, while he who undergoes lithotripsy is only moderately restricted ; the recovery is often in the former case very tedious, whilst in the latter it is effected at once. Lithotomy often produces serious accidents, such as impotence, incontinence of urine, and urinary fistulæ ; lithotripsy, from its nature, cannot cause any of these consequences : the former, whatever may be the means employed, always requires a large and deep incision ; the latter requires none. Lastly, lithotomy may cause almost instant death from hemorrhage ; lithotripsy cannot, under any circumstances, produce such a termination. We might carry this parallel still further, but the remarks we have just made, will, we think, be sufficiently convincing.

Thus the comparative advantages of the two operations cannot be balanced, and do not leave any doubt as to which the patient and the surgeon ought to choose." 4.

But may lithotripsy be performed at all times, and with *equal success*, in health and in sickness—in sound bladders and diseased—with healthy kidneys and unhealthy ones? Has Baron Heurteloup, and have other lithotriptists, *never* refused to operate on account of unpropitious circumstances, or would they never do so? We put these questions ; let others answer them. Does lithotripsy need *no* confinement, and is the cure effected at once? In short, is lithotripsy so certain, so speedy, and so safe, as an ingenuous reader would be led, from the foregoing quotation, to consider it? Again we put a question ; the answer is not with us.

It has been objected to lithotripsy, that the instrument might break in the organ, or that fragments might remain, and become the nuclei of new formations. To the former, the Baron replies that no instrument has ever yet been broken. We may be mistaken, but we think that we have heard of two cases of this kind ; in one, we " believe that the instrument was broken" —in the other, bent. The occurrence, then, is possible ; but still the chance, with care and caution, must be inconsiderable. To the second objection M. Heurteloup replies, that facts hitherto have not been in its favour, and that if fragments did in some instances remain, they would merely require another application of the instrument. Perhaps the truth is, that the opponents of lithotripsy dwell rather too much on these objections—the Baron rather too little.

The historical notice of the invention of lithotripsy is rather instructive than curious. Arts, or even processes of any consequence or import to mankind, have always been perfected by slow degrees. To this there are no exceptions. The most brilliant theories are generally of comparatively gradual growth ; the seed must be sown, and the soil must be apt. The know-

ledge of a fact is often diffused amidst many, before the man that gives it to the public connects his name with its origin, and comes to be considered as its sole inventor.

"In 1519, Alsaharavius expresses the idea only, of breaking small friable stones in the bladder with an instrument, (*instrumentum subtile*) of which, however, he gives us no description. In 1626, Sanctorious gives the plan of an instrument composed of a tube, one extremity of which divides into three flexible branches.* He says that if a fragment of a stone, or an entire calculus, descended from the kidneys, and was not expelled with the urine soon after its descent into the bladder, it might be extracted by first filling this organ with water, and then introducing the instrument he speaks of through the urethra, the branches of which, when arrived in the bladder, should be expanded, and applied close to the neck; he thinks that by then letting the water escape, the stone would be carried forward towards the three branches, seized by them, and extracted by withdrawing the instrument from the bladder. This author proposed also, and it is Haller that relates it, that if the stone should be too large to be extracted, it should be perforated with a stylet."† 12.

After this, successive improvements were proposed by various surgeons, but the modern instrument lays claim to two parents, M. Leroy d'Etiolles, and M. Civiale. Between these gentlemen there appears to be a difference, and we are not surprised that it is so. M. Heurteloup takes part with M. Leroy, and M. Civiale is designated as little better than a quack. We have not the means of deciding the question; if we had, we should want the time and the inclination. Yet we do not consider such disputes as frivolous, for reputation and fame are as dear as existence to the man of science.

When lithotritry was first bruited on English ground we heard only of M. Civiale's instrument. It consists essentially of branches to seize the calculus, with a peculiar drill worked by a drill-bow to perforate it. We doubted if this could be sufficient to remove a stone, to leave no fragment behind. We were told that it was. Let us hear what M. Heurteloup, himself no mean lithotritist, has to say.

"*To seize a stone, to make a hole in it, to drop it, to search for and retake it* in the bladder, in order to make another hole in it, to repeat this operation until it is broken, and afterwards to submit each of these broken portions to the perforation or pressure of the instrument, in order to render them small enough to be expelled—all this certainly appears a slow process, and one often painful in its application.

An instrument capable only of making a simple hole in the stone, appeared to me one of the smallest results that might be obtained by mechanical ingenu-

* "All these primitive instruments are drawn in the plates of M. Leroy's interesting work, entitled, 'Exposé des divers procédés employés jusqu'à ce jour pour guérir de la pierre sans avoir recours à l'opération de la taille (Paris, 1825).' This work may be procured at Baillière's, 219, Regent Street.

The instrument of Sanctorius is drawn (Pl. I., figures 16, 17, and 18.)"

† "Haller relates this of Sanctorius, but we do not find in his work any idea of the kind; Haller thought he had seen it in Sanctorius, because he mistook the figure, and took the stylet, which Sanctorius destines to reunite his triple branches, for a perforator. It results, therefore, that Haller, without being aware of it, invented lithotritry, whilst at the same time he believed it impracticable, for he adds—*Speculationem puto meram.*"

ity, founded on the possibility of introducing through the urethra into the bladder a tube of three or four lines in diameter. This was, in my opinion, only the first step of science in a new path.

It struck me that the ‘perce-pierre’ was only sufficient when the stone did not exceed, or only slightly exceeded the diameter of the central drill, which was to perforate it, but that it became insufficient in proportion to the diameter of the calculus, which, as it became larger, would require a more frequent repetition of the perforations.

I apprehended, and many experiments afterwards proved it to me, that this instrument, besides its inefficiency, was not devoid of danger in its application; such for instance as fixing the hooked extremity of one of the branches in one of the holes made in the stone, and that also of engaging one of these hooks in the sinuses existing in some bladders. I was also convinced that the action of this instrument was often very deceitful, from the perforator falling into one of the holes made in a previous attempt. I saw that when the fragments were to be destroyed it too frequently happened that the portion was only grasped between two branches, so that it could scarcely be touched by the drill, which only acts in the centre.” 33.

Of course we do not consider ourselves competent to offer a critical opinion on the subject, yet we venture to say, from no slight observation of books, of manners, and of men, that rival lithotritists will find imperfections in M. Heurteloup’s contrivances, as well as in M. Civiale’s. The following are the principles that have regulated the Baron in his improvements on or additions to the original instruments. We see in the mental process that guides the hand, no deficiency of philosophic connexion.

“ I considered that if instead of breaking the stone by repeated perforations, I could devise some means of gradually and progressively enlarging a hole previously made, I should succeed in destroying the calculus at once, and by only seizing it once in the bladder; the centre being thus excavated and reduced to powder, the rest of the stone would fall in the form of a shell.*

I considered also that if after having reduced the stone to this shell, I could invent an instrument capable of crushing these flat and concave fragments with facility, as soon as they were taken, and without much time being spent in manoeuvring, I should then have completed a system of destroying vesical calculi, which approached as near as possible to perfection; for on the one side I should have found the most rapid means of destroying whole stones and reducing them to fragments, and on the other, of again reducing these fragments sufficiently, for them to be easily expelled through the urethra.

I considered also, that if instead of operating with the patient on a common bed, on which he is always inconveniently situated, both for himself and the surgeon, I placed him on a small bed, expressly constructed in such a manner that he might lie at perfect ease, and if at the same time I was able to alter the position of the pelvis at will, I thought I should proceed more conveniently with the destruction of the stone, and should add to the chances of success all the advantages resulting from a position convenient both to the patient and to the surgeon; and lastly, I considered that if I could contrive some method of holding the instrument during its action upon the stone, more firmly than by the

* “ The original idea of excavating the stone is, as we before stated, due to M. Leroy (D’Etiolle), but the elastic files he intended for this purpose, act very inefficiently on the calculus. The primitive idea might have been entertained by many persons; the difficulty, which I have been able to surmount, was to put this idea into execution.”

chevalet proposed by M. Leroy, I should add still more to the improvement of this art, as without a firmer support than the *chevalet*, held in the hand of an assistant, my system of excavating the stone was impracticable.

I have by degrees achieved all these objects, and with sufficient success to have obtained several rewards from the 'Institut de France,' and particularly the great prize of surgery for the year 1828.

Thus in the first place I have substituted for the 'perce-pierre' which only destroys calculi of a certain size, by making *repeated* perforations in them, and which requires *frequent* attempts and *much* searching in the bladder, a system of excavating, which only requires the stone, especially when nearly spherical, to be once seized, in order to break it into pieces.*

Secondly, I have advantageously substituted for the same instrument, another peculiarly well adapted for destroying flat or concave fragments resulting from the action of the excavating instruments, and flat stones, which from their shape are extremely unfavourable for the 'perce-pierre.'

Thirdly, I have advantageously substituted for the inconvenient position of the patient on a common bed, a position which may be altered and adapted at will to the comfort of the patient, and the convenience of the surgeon, and *ceteris paribus* renders the operation more expeditious and more gentle.

Fourthly and lastly, I have advantageously substituted for the unsteady support of an assistant to maintain the instrument during the operation, a firm and immovable 'point d'appui,' (fixed point,) useful when operating with the 'perce-pierre,' but indispensably necessary when operating with my excavating instruments.

Such is a most concise sketch of the four principal objects I have had in view. These, added to some new ideas with regard to the accessory treatment, such for instance as ascertaining the form of the bladder and stone before commencing the operation, that of injecting, that of producing the expulsion of the fragments from inert bladders, or the extracting them when lodged in the urethra, the means of discovering small stones or fragments in the bladder by a different method from that generally pursued, complete all the lithotritic apparatus of which I am the inventor. The means by which I have been enabled to accomplish all these objects will be explained in the course of this work." 39.

ON THE URETHRA AND BLADDER.

The Baron considers these parts in relation to lithotritry. As he makes some observations which are important to surgeons upon other accounts, we shall pause awhile, and extract what may be useful. A perfect acquaintance with the relative anatomy of the urethra is indispensably necessary to every practical surgeon. We are sorry to say that we witness daily proofs of the lamentable consequences of ignorance, or, at all events, imperfect information.

It was for some time imagined that a straight instrument could not be passed without difficulty into the bladder. This illusion has been effectually dispelled, yet still the quantum of difficulty is exaggerated. It is frequently imagined that the narrowest part of the urethra is the membranous portion. In point of fact, the least extensible is the anterior, and if a sound will pass through this, it ought to pass readily through the remainder of the canal.

* "The 'trois branches à virgule' is used for spherical calculi of from 8 to 12 lines in diameter; and the apparatus 'évideur à forceps' for those of from 12 to 24."

But the orifice of the meatus urinarius is frequently so small from natural conformation as to oppose the introduction of instruments of any size.

" Two anatomical dispositions contribute to contract the orifice of the urethra; first, we remark that this contraction may be caused by a fold of the mucous membrane, which unites the two lips of the meatus at its inferior angle, and according as this fold is large or small, so is the entrance of the canal: this is sometimes the only cause; but it occasionally happens that this membrane being divided, the orifice is no larger, and does not allow us to estimate the size of the urethra below the meatus. The additional obstacle is a kind of projection, formed by the two extremities of the erectile tissue which composes the glans penis; this, in some, projects considerably into the urethra; in others, though not so evident, still it impedes more or less the free introduction of the sound into the canal. It is on this projecting point that the sort of sensitive *sentinel* is placed, which warns the healthy person of the desire to void his urine, and the patient of the presence of a stone in his bladder, or of an inflammation of this organ; and it is this point which sympathizes in the affections of the other extremity of the canal.

The knowledge of this form of the meatus urinarius will afford us some useful precepts, which will be of service in those cases in which it is necessary to enlarge this opening." 49.

The Baron gives a very good description of the obstacles met with in the prostatic part of the urethra. It is highly deserving of attention.

" From the membranous portion of the urethra to the neck of the bladder the canal gradually increases in size: this is the part named by anatomists the prostatic portion; if we consider its absolute size, we should suppose that the instrument ought to pass it with ease after having traversed the membranous portion, but there are some circumstances which may prevent this, and which are in fact sometimes met with. This part of the urethra forms a cone, the larger opening of which is turned towards the bladder, and the smaller forms a continuation with the membranous portion. In the middle and lower part of this cone is that fleshy eminence named the *veru montanum*; but this is seldom sufficiently large to impede the progress of the sound, and besides it may be easily depressed when the third lobe of the prostate, which sometimes exists, is not enlarged.

A greater obstacle presents itself in that kind of *cul de sac* which terminates the prostatic portion nearest the bladder; this may impede the progress of the sound, and does so the more frequently in proportion to the small diameter of the instrument, and from there being two other additional causes which add to this difficulty.

There is often above the margin of the *cul de sac*, which forms the lower part of the neck of the bladder, a kind of fold of the mucous membrane, in the form of a crescent, and more or less developed in different individuals. This fold, which is a sort of valve, forms the posterior boundary of the *cul de sac*, and of course renders it deeper the more it is developed.

Besides this mechanical impediment which is still more augmented by the slight curve which the canal makes at this part, the introduction of the sound may be also impeded by another circumstance, namely, the contraction of the circular fibres of the neck of the bladder, and still more directly by the contraction of those muscles which give these organs the motions required for the due performance of their physiological functions. The levator ani muscle may, by the contraction of its anterior fibres, oppose the introduction of the straight sound, its action being to raise simultaneously the sphincter ani and the prostate; thus, when it contracts, it draws the gland up, and compresses the lower part of the canal against the upper, by which means it is contracted, not as in

the membranous portion by a circular constriction, but, by being as it were in some degree flattened, which hinders the introduction of the sound.

Thus, after taking into consideration the obstacles which the internal structure of the urethra, and the laws which influence the contraction of its different portions offer to rectilinear catheterism, we see that, in the generality of cases, when the urethra is in a perfectly relaxed state, a straight sound of three or four lines in diameter ought to pass with facility." 52.

In order that a straight instrument may be passed into the bladder, the penis must be sufficiently depressed for the urethra to describe a right line from its orifice to the bladder. This is effected by depressing the urethra, where it is braced to the symphysis pubis by the suspensory ligament of the penis. Fortunately this is sufficiently extensible. When the instrument is in the bladder, that part of it embraced in the triangular ligament of the urethra is fixed or nearly so, consequently the instrument can only be made to turn as on a pivot, the extremities admitting of motion freely in contrary directions. If the straight sound when introduced is left to itself, it forms with the horizon an angle of from 18 to 20 degrees.

For the full and forcible expulsion of the urine the prostatic and membranous portions of the urethra must be fully dilated. In those who have stones or fragments in their bladders this dilatation is not fully effected, and this again becomes an obstacle to the ready escape of a small stone or fragment.

" Although it may happen that, when the urine is expelled freely, the fragments, if they are sufficiently minute to pass the neck of the bladder, are carried along by the stream of water, traverse the canal as through an inert tube, and are immediately cast out; yet if this expulsion is not sufficiently free, and the fragment, instead of getting into the stream when it commences to flow, only passes in just before the water stops, it may be impeded in some spot of the canal, which retains it more or less securely according to its degree of contraction, or according as the part is *absolutely* smaller. Generally a new flow of urine relieves the patient; sometimes, however, the canal contracts upon the fragment, and retains it, but dilates it sufficiently for the urine to pass.

The canal, like the neck of the bladder, possesses the *elective faculty* of retaining the fragments, and at the same time allowing the urine to flow. This *election* being a phenomenon dependant on sensibility, will lead us to lay down some useful rules to aid the expulsion of the fragments. Now, in considering the urethra with respect to its absolute capacity, that is, entirely devoid of contraction, the fragments traverse the canal, more or less rapidly, according as the part through which they pass is of greater or less diameter, or according as it is directed upwards or downwards; thus, they are frequently lodged at the entrance of the neck of the bladder, but seldom remain in the prostatic portion, which is large, and allows them to pass rapidly to the membranous portion, and the more so, as, when the patient is standing, the direction of this prostatic portion is from above downwards; they often lodge in the membranous, but quickly traverse the bulbous portion, which, although directed upwards, is the largest part of the urethra; lastly, they may be stopped according to their size, nearer or further from the meatus, for the urethra from the bulb to the meatus generally diminishes in size.

When the fragment is stopped in the canal, its progressive motion, towards the extremity of the passage, is produced either by the propulsion given to it, by the stream of urine, or by that expulsive contraction which the whole of the canal possesses, and which belongs to its physiological structure; fortunate are those patients in whom it is well developed, and more especially those in whom there is only a slight degree of spasmodic contraction." 62.

The next subject investigated by M. Heurteloup, is the form and disposition of the bladder. The anatomical description of this viscus is worthy of attention, and the changes in form which it undergoes, under the varying quantities of its contents, are studied with ingenuity and described with care. We cannot do justice to this part of the work by any extracts. We shall content ourselves by giving a summary of the Baron's conclusions, referring to the work itself for the experiments and reasonings by which they are supported.

1mo. The fundus of the bladder is elevated during its simple retentive contraction.

2do. Whilst the desire to make water is moderate, which includes only a simple retentive contraction, the bladder diminishes in its antero-posterior diameter, at the expense of the anterior portion.

3tio. During a strong desire to pass the water, caused by the injection of too large a quantity of fluid, the fundus is contracted and elevated in its whole extent; and, during the violent contraction of the bladder, caused by the injection of a large quantity of fluid, the posterior part, particularly its upper portion, advances towards the neck. Hence it is seen that, during the violent contraction of the bladder, caused by the injection of a large quantity of water, the bladder, instead of being enlarged towards the inferior portion, diminishes in capacity; hence, also, when the bladder is in this state of contraction, if we let some of the water which it contains flow out, it increases in size at its fundus. This is in direct opposition to the generally-received opinion.

" It appears extraordinary that the bladder although distended with water, can, without any of this water escaping, contract to such a degree, that the sound can only be moved from the extent of from an inch to an inch and a half from the fore to the back part, and to about an equal extent laterally. As the water is incompressible, and the volume of the fluid in the organ remains the same, it must of necessity change its position during the state of contraction, and this is what in reality does take place; this water forced from the lower, flows towards the upper part of the bladder, or as I commonly express it, *the lower part of the bladder, by its contraction injects the upper.* Indeed, if we compare the muscular power of all that portion of the bladder, which is situated above a horizontal line drawn from the neck and passing round the viscus, to that which lies below this line, we shall readily conceive that when the organ contracts throughout its whole extent, one of these parts must yield to the other. In the upper part there is only the muscular coat, and even this is weaker at the apex than elsewhere; whilst in the lower portion there exists, not only the muscular coat, which is itself very much developed, but also powerful auxiliaries; it is not, therefore, surprising, that when these two halves of the organ are contending together, the weaker should yield to the stronger, and that that portion which presses least upon the liquid, should become distended notwithstanding its contraction.

If now we consider the great dilatation which may take place in the upper part of the bladder, as is proved by the large collection of fluid in some cases of retention of urine, we shall come to the important conclusion that *the bladder may receive a large quantity of fluid without being dilated at its lower part.*" 86.

We give the foregoing observation without comment, as we cannot pretend to determine whether M. Heurteloup is right in his statements or not. The following hint may be useful to lithotomists, as well as to lithotritists.

" We sometimes, at the moment of contraction, have the sensation of hard extended cords, on which the point of the sound strikes and rebounds, and which give to the hand a shock sometimes so forcible as to deceive us, and induce us

to conclude that we have touched a stone. We know that these vibrating cords are nothing more than columns which exist in certain bladders. If, with the end of the sound, we examine the part where we experience this species of vibration, we find on each side of the fleshy pillar which produces it, a depression which is sometimes of considerable size, and into which the point of the sound passes ; these depressions or cells are necessarily produced by the contraction of these *columnar bladders* upon the fluid they contain : the mucous membrane adhering closely to the kind of grating, which is formed by the fleshy bands composing its muscular coat, dips down where it is not supported, and projects where the muscular fibres are prominent. This, although a natural disposition, is one extremely important to be attended to in considering the operation of lithotripsy ; for when the muscular coat assumes this form in a very powerful manner, the simple depressions or cells become pouches in which the calculi may be lodged, and in which, moreover, the hooks of the forceps of an unskilful, careless, or unpractised operator may become entangled." 87.

From experiments on the dead body, he points out the positions assumed by stones of round and flat conformation. We cannot but believe that such observations, though useful and instructive, are not to be received with implicit confidence. We need scarcely insist on the differences that exist between a living bladder and a dead one. With respect to round stones, the Baron remarks :—First, that the more spherical a stone is, the more immediately it becomes placed before the neck of the bladder, and, consequently, being in the axis of the instrument, is more easily seized. Secondly, that the smaller a round stone is the easier it is seized, since its small size keeps it at a distance from the neck, and, consequently, it is at the spot where the branches are most expanded. The Baron also shews how far the position of stones may be purposely altered by the recto-curvilinear sound, and that round stones are more easily turned and more easily seized than flat ones. M. Heurteloup points out the advantages of elevating the pelvis, under certain circumstances, in order to facilitate the prehension of the stone. He lays down the following rules on this subject.

" First, That it is extremely advantageous to raise the pelvis to an angle of forty-five degrees, in order to seize a round stone of an inch in diameter with gentleness to the organ, but that it is absolutely necessary to do so, in order to seize one of from eighteen to twenty-four lines.

Secondly, That this elevation is necessary, in order to seize flat stones, in direct ratio to their size.

Thirdly, That in order to seize the fragments of a stone with ease, this elevation is very serviceable for collecting them in that part of the organ most distant from the neck, and that it is often necessary to add to these means, shocks given to the pelvis, in order to become master of the most irregular of these fragments with facility.

Fourthly, To seize a stone less than an inch in diameter, the elevation of the pelvis is unnecessary, and may be disadvantageous, since in the horizontal position a stone of this size is naturally in relation with the two expanded branches contained in a straight tube.

To give, in the last place, some further idea of the advantages of the elevation of the pelvis to 45 degrees, we may remark, that during this elevation the intestines no longer press their weight upon the upper and back part of the bladder ; this induces us to employ these means in order to diminish or put a stop to the too violent contractions of the organ, since this position deprives, or at least lessens, the influence of one of the most powerful auxiliaries which add to its contraction." 110.

ON CALCULI.

M. Heurteloup, after presenting a tolerably good account of the symptoms produced by calculi in the bladder, an account, by the way, which he published, with what we must consider bad taste, in the form of a little stitched pamphlet, proceeds to dedicate 32 pages to the examination of their physical properties. It must be obvious that the form of a calculus must be very important in a lithotritic point of view, nay, it must also be so to the lithotomist. But this is not all. Particular forms are more or less affected by calculi of particular chemical composition, and with that composition they are hard or soft, lamellated or confusedly crystallized. Calculi composed of lithic acid and of the phosphates when similar in shape, and of the size of from three to six or eight lines in diameter, do not produce the same effect on the organ.

"The smooth and hard uric acid gravel moves freely in the bladder, it falls into the neck, which it instantly blocks up during the expulsion of the urine; but being moveable and rolling about, it seldom remains in this position; it either bounds away, to return instantly, or its surface, which is most commonly polished, allows it, when placed in the funnel of the neck, to be forced out by the contraction of this part, which thus expels it by giving it a sliding movement; in this case, the irregularity which is caused in the stream of urine, is generally only instantaneous: for as it is often forced away, and again returns, the patient feels the attacks more frequently, but they are most commonly only of short duration. The uric acid gravel, which is dry, and of a density, but little greater than the fluid which surrounds it, rebounds about the neck, against which it strikes, either in the motions of the whole body, or during the expulsion of the urine; whence it is that the sensation of tickling or pinching at the end of the penis is generally felt by those patients who have red gravel of uric acid in their bladder, that this sensation is more severe, more sudden, and unexpected, and also that the stream of water is more frequently interrupted, but only for a short time.

Gravel composed of mixed phosphates is generally impregnated with the fluid which contains it; it is softer, and heavier, and is most commonly round; its surface is rough and uneven, and its physical properties, so different from those of uric acid gravel, considerably influence the symptoms which it produces.

Loaded with moisture, and consequently of great density, it moves less in the organ, it rolls more slowly; any shock given to the body is not so readily communicated to it as to a smooth lighter gravel; it alters its position with greater difficulty, and when it does alter it, it remains for a longer time in that particular situation in which any motion of the body may have placed it, or to which it has been forced by the action of making water.

As long as this species of gravel is not at the neck of the bladder, the patient suffers less; but, unfortunately, it is generally at this spot with which it is in more direct and permanent contact. Whilst the patient is walking, it falls heavily down upon this opening, and thus causes a longer continuance of the painful sensation, and this sensation is more dull and heavy.

But if the mixed phosphate gravel produces such distressing symptoms when influenced by the motions of the body, they become still more painful during the time of expelling the urine; and it is at this moment that the form and nature of the gravel can be ascertained by the symptoms which arise from its physical properties. Most commonly, the stream of urine is not stopped very frequently. If the form and specific weight of this gravel do not allow it to yield to the influence of the urine as readily as the uric acid gravel, and prevent it from pass-

ing so quickly to the neck, these physical properties cause it to remain, when once forced into that infundibulum which the neck forms during the act of expelling the urine; it does not readily escape from it; its chalky and uneven surface prevents the circular contraction of this part of the organ from forcing it out; it is locked in, as it were, between the parietes of the neck, and is held there the more firmly in proportion to the power of the contraction.

At first, the neck of the bladder does not feel its presence so acutely; it only surrounds and compresses it by its natural contraction, but this soon changes into a morbid action. The neck rebels against so disagreeable a companion; its sensibility increases, the membrane inflames, and then result spasms, a constant desire to make water, catarrh of the bladder, purulent urine, and, in a word, a collection of symptoms so severe, that one is quite astonished to meet with them in some patients who have only been afflicted with stone for a short time. We far less frequently meet with these symptoms when the bladder only contains uric acid gravel, which is rough; and we never observe them when the gravel is smooth and polished." 128.

Besides the differences thus occasioned others depend upon the round or flat form of the stone. The lithic acid gravel is generally flat, that of the mixed phosphates generally regularly or irregularly spherical. The symptoms produced by these gravels are different, and it is important to ascertain that difference, because it will serve to point out whether the stone is flat or spherical.

Round gravel of four or six lines readily passes to the neck of the bladder, and impedes the flow of urine the more, the more round and less polished the gravel is. Flat gravel of some size does not so readily pass to the neck, and when there, either produces no effect, or only very slightly impedes the stream. Sometimes it acts as a valve and renders the flow of urine intermitting; most commonly it lies lengthwise, and the stream is more or less twisted. By these symptoms the Baron asserts that we can conclude, *à priori*, and without sounding, whether the nucleus of the calculus has been round or flat.

Stones having acquired a certain size in the bladder are liable to modifications in form from several circumstances. The more moveable they are in the body the more they are disposed to be spherical, and vice versa—when there are several stones they are worn away at several points of contact, but when of such a size as to be constantly in contact they are worn away at one spot; when many they are also generally polished, dense, and hard—lastly, the form is modified by the nature of the salt; oxalate of lime and the mixed phosphates tend to give a round form; the lithic acid, more particularly in the ratio of its purity, a flat one. When the bladder inflames and secretes much mucus the mixed phosphates are either deposited in distinct layers or in a shapeless mass. M. Heurteloup makes some remarks on the laws which regulate the formation of the phosphates. Having lately treated of this subject much more fully and satisfactorily than the Baron, in our analysis of Mr. Brodie's lectures, we need not advert to it further at present.

When the stone has attained some size it gives rise to nearly the same symptoms, whether it be round, oval, or flat. The bladder now contracts around the stone, and the latter is more or less fixed in consequence. If round, it can increase to a greater size before it is fixed; if flat it remains in the position in which it is most natural for it to lie, and its longest dia-

meter is generally placed transversely. If oval or oblong it is usually in this position ; if its greatest diameter should correspond to the antero-posterior diameter of the bladder, one of its ends sometimes projects into the neck whilst the other rests upon a part more distant from it, the calculus assuming the shape of a gourd. Inflammation of the bladder being excited by large stones, the mixed phosphates are secreted, and an irregular amorphous deposit thrown down upon the stone.

Round calculi are most readily seized and retained by a three-branched instrument. Flat stones are not so adapted, for four reasons : their position in the bladder—their form—their different diameters—and their hard and polished surfaces. A flat stone is more readily seized and held by forceps consisting of two branches. After some reflections shewing that round stones are calculated for being bored, flat ones for being crushed, the Baron concludes thus :—

“ We have seen that round calculi can be most readily *seized* and *held* by forceps constructed with *three or four branches expanding, when projected from a straight tube* ; and we have also seen that these calculi, from their form, and from the nature of the salts which compose them, allow of being hollowed from within outwards by the eccentric action of the instrument ; now in this there is a fortunate coincidence, for these two mechanical means combine well together. In fact, the forceps thus constructed, holds the calculus in such a manner, that its axis, and that of the forceps, are in the same line, and any excavating instrument requires exactly, in order that its action may be complete, that these two axis should be the same.

We have seen that oval and flat calculi, on account of the two surfaces they presented, were seized with facility with an instrument consisting of two branches, and that these calculi yielded to the pressure of an instrument, but did so more readily to percussion. Here again is a fortunate coincidence, for the smaller the number of branches adapted to an instrument, the stronger they both are ; and in order to destroy a stone by crushing, or by percussion, force is required, and the smallest number of branches we can employ is two.

Thus we see that the physical properties of calculi require the instruments to be differently constructed, in order to arrive at the important object of effecting their comminution in as short a time as possible, with the least movements possible, and in the most gentle manuer for the bladder.” 156.

The next portion of the volume is devoted to the analysis and description of the lithotritic instruments. These we cannot affect to describe ; the curious must refer to the work itself. Here we may observe, once for all, that we cannot analyze these “ Principles of Lithotritry ;” they forbid it. We can only select such portions for extract, condensation, or comment, as appear to us to be likely to be instructive to professional readers, independent of merely lithotritic considerations. The following rules laid down by the author as necessary to be observed in the construction of instruments for this operation are deserving of insertion entire ; indeed they cannot be curtailed. They may afford useful hints to such of our ingenious countrymen as may be devising alterations or improvements in the present apparatus.

“ First Rule.—Rectitude in a sound, being : 1st, *the most favourable shape for bringing, without effort, the extremity of the instrument into contact with a great extent of the parieties of the bladder, and more especially with its fundus* ; 2d, *for allowing the instrument to be moved backwards and forwards with facility* ; 3d,

for permitting it to be rotated on itself, all instruments of lithotripsy must be straight in that portion of them which remains in the urethra during the operation, for a curve would render them faulty in proportion as it impeded the execution of these three fundamental properties.

Second Rule.—Since the operation of lithotripsy must be performed whilst the bladder is distended with water, it follows that the instrument must unite the necessary conditions for preventing the liquid, when once introduced, from escaping during the operation; hence, 1st, *it is necessary that the instrument should be, as nearly as possible, of the same diameter throughout, and that its vesical extremity should be as little enlarged as possible*, for the urethra through which an end much enlarged passed, would be but incompletely filled by the body of the instrument, and the water would consequently escape between the instrument and the sides of the canal; 2d, *the instrument must be of sufficient size to fill the canal, but not large enough to distend it, and render the movements difficult*; 3d, *it must finally be constructed so as to prevent the water from flowing out between its component parts*.

Third Rule.—Since urethrae vary in size, from two lines and a half, to four and a half, it follows that the instruments must also present different diameters.

Fourth Rule.—The contraction of the bladder being sometimes powerful enough to expel, between the canal and the instrument, almost all the water it contains, it is necessary that every instrument of lithotripsy should allow a fresh injection to be made into that organ, in order to distend it, so that the instrument may be closed without any danger.*

Fifth Rule.—Since the bladder varies in its antero-posterior diameter from two to three inches, on account of its contraction, a lithotritic instrument must be constructed, so that its branches may expand sufficiently to seize the stone, and yet not project more than two inches and-a-half from the tube which contains them. The instrument must also admit of the projection of the branches being diminished, if circumstances should require it; and this is the more requisite, since those bladders which contain the largest stones are generally the least capacious.

Sixth Rule.—When an instrument is expanded, and is in action in the interior of the bladder, the spot where the branches project from the tube is almost always in close contact with the neck of that organ; hence it is necessary that the branches should have free motion, without affording a possibility of pinching at the part where they unite, and should always preserve the same distance between them, whether projected from, or drawn into the tube.

Seventh Rule.—The bladder sometimes violently contracts during the operation of lithotripsy, and presses upon the branches of the instrument which, when drawn towards the neck, are compressed by this part of the viscus, so that the surgeon is no longer master of the expansion of his forceps, and his manœuvres are totally impeded. It follows, therefore, that the branches of every lithotritic instrument should be supported when they project from the tube and are expanded in the bladder, and that their expansion should not be entirely entrusted to the elasticity of the metal.

Eighth Rule.—The object in constructing a lithotritic instrument being to bring a mechanical agent into action in the interior of the bladder, where the surgeon is unable to see in what manner it acts; it follows, that every instrument for lithotripsy must be graduated; so that by means of certain signs placed at the extra-vesical extremity of the instrument, the operator may be enabled to ascertain what is going forward at the intra-vesical portion. Marks well contrived are therefore of the greatest importance.

* "I am here only alluding to the instruments which act by progressive wasting on the stone, and which consists of three or four branches, for these alone are apt to become entangled in the bladder."

Ninth Rule.—Some bladders are very irregular, and their superior and posterior parts, although distended with water, are sometimes forced from the sacrum towards the neck of the bladder, either by the contraction of the viscus itself, or by the pressure of the intestines which are pushed down by the abdominal muscles ; it follows, therefore, that an instrument, destined to seize large calculi, which require a large expansion of the branches, is faulty in its construction, *if the branch which is above terminates in a hooked extremity ; it is the more faulty the further the branches project from the tube to grasp the stone, and the smaller the size of the bladder.*

Tenth Rule.—Since it is necessary, under certain circumstances, to discontinue the operation of lithotomy, either on account of a great degree of sensitiveness in the patient, or because of a violent and permanent contraction of the bladder, it follows, that it is not sufficient for an instrument to *grasp* the stone with facility, *but it must relax its hold with equal ease* ; and as this becomes more frequently necessary in operating on large calculi, this property must predominate more especially in those instruments destined to act in such cases.

Eleventh Rule.—Since the excavation of large calculi produces a very considerable quantity of powder, which would clog the action of the ‘évideur’ (excavator), it follows, that *an instrument intended to excavate such calculi, must afford the facility of injecting water into the bladder to wash away the superabundant powder, even whilst the instrument is in action.*

Twelfth Rule.—Since that portion of the instrument which destroys the stone by progressive wearing away must be removed as far as possible from the parietes of the bladder, it follows that *this action must proceed from the centre of the calculus to its circumference* ; for were it otherwise, the destroying agent would be in almost immediate contact with the interior of the organ.

Thirteenth Rule.—Since the action of the instruments upon the stone must be performed with the greatest regularity, both as regards the action of seizing and that of breaking, and since the exact performance of this must depend entirely upon the manœuvres of the surgeon, it follows that *no part of a lithotritic instrument must be left to act by means of springs, the movements of which are in a great measure independent of the surgeon's will.*

Fourteenth Rule.—Since it is necessary that the different parts of an instrument should play with facility one upon another, in order that the surgeon may have all the precision and delicacy of his tact, it follows that the instrument *must not only admit of this free and easy play*, but it must also be so constructed as to render it easy to take it entirely to pieces, so that it may, in all its parts, be thoroughly cleaned. Without the observance of this condition in an instrument, there cannot be sufficient precision in the manœuvres.”* 168.

ON THE CIRCUMSTANCES WHICH INTERFERE WITH, OR ARE FAVOURABLE TO LITHOTRITY.

Lithotomy is not equally applicable to all ages. It is generally, and for reasons which must partly be very obvious, inapplicable to children under

* “ A great number of instruments have been invented to perform the operation of Lithotomy, and more especially in France, but they have proved unfit for use, as the greater part of them deviate from one or the other of the rules here laid down, and are thus the more defective and inapplicable, in proportion to the importance of the rule neglected ; many of these instruments are faulty from the non-observance of 5, 6, 7, or 8 rules, and unfortunately operations attempted with them have sometimes caused the death of the patient ; but can such fatal terminations be laid to the account of Lithotomy ?”

eight or ten years of age. The adult is the most favourable time of life for the operation, and the smaller the stone, and the earlier it is operated on the better. Old persons are less adapted for lithotripsy on account of the deficient power of the bladder to expel its contents, and the fragments of the calculus.

Corpulency, which is an impediment to lithotomy, rather offers facilities for the performance of lithotripsy; it is therefore no objection, at least in a healthy condition of the urinary system. A great degree of organic disease furnishes sufficient reason for shunning the operation, especially if several sittings are required. A strong calculous diathesis may also prohibit lithotripsy, or give the surgeon pause before he ventures on it.

The state of the urethra requires consideration. If naturally of small size, the circumstance is unfavourable; a small orifice is inconvenient, and must be divided, and stricture of the urethra renders it difficult or even impossible.

" We have treated very few calculous patients by lithotripsy who had, at the same time, considerable strictures; all such as we have treated were cases of small calculi, which could be easily destroyed; but although the canal was dilated to the extent of three lines and a quarter, the fragments were voided with considerable difficulty. They frequently lodged in the urethra, arising either from the strictured parts contracting on withdrawing the bougie, or from this part of the canal being without that kind of explosive contractility which is observed in a healthy urethra, and which these patients possessed in a high degree. All the other patients had stones much too large, considering the state of the strictures, for lithotripsy to be applicable.

It must now appear evident how difficult it is to decide upon the propriety of performing lithotripsy in a patient with a stricture, before removing the stricture; since it is the calibre of the canal which influences the power of the instruments, and the facility with which the fragments will be voided. It is impossible to decide until the canal is dilated as much as it admits of. We must, therefore, in these cases of stone combined with stricture, when there is any doubt about lithotripsy, first treat the stricture; and we may do this the more readily, as at any rate this treatment will be beneficial to the patient, even should we afterwards find that the operation is inadmissible. If, on the contrary, from the diseased state of the bladder, and the size of the stone, we at once decide that lithotripsy ought not to be attempted, it will then be better to perform lithotomy at once, provided the stricture be not so complete as to prevent the introduction of the staff." 328.

A large scrotal hernia is an embarrassing, but not insurmountable obstacle.

" Stones lodged in the urethra give rise also to great, and sometimes even insurmountable difficulties, especially when the calculus has become imbedded in the canal, and can only be removed by an opening. We have met with a case of this kind. After the stone was removed, and the opening healed, this part of the canal was too much contracted to permit the operation of lithotripsy to be performed, in order to remove the other calculi which were in the bladder. Lithotomy was resorted to in this patient. There is a very important consideration with regard to calculi thus lodged in the urethra, to which lithotomy itself gives rise. Before the art of pulverizing a stone in the bladder was introduced, the rule was, that, when a calculus became lodged in the urethra, great care was to be taken not to push it back again into the bladder, but to extract it by making an opening into the canal. This rule was given in order to avoid the operation of lithotomy, which must be performed if the stone be made to pass

from the urethra into the bladder. But now that we are enabled, by more gentle means, to remove a stone, thus returned into the bladder, without subjecting the patient to the dangers of lithotomy, the rule ought to be precisely the contrary—that is, the stone ought, if possible, to be returned into the bladder, and no opening made to remove it; for, if this operation be trivial when compared with lithotomy, it is an important one when compared with lithotritry. The advantages of lithotritry are still more important when we consider that, when a stone, thus lodged in the urethra, has been removed by an opening, it is frequently found necessary to perform lithotomy besides, to remove other small calculi remaining in the bladder, the existence of which was not suspected, since the stone lodged in the urethra obstructed the passage, and prevented those in the bladder from being ascertained.” 329.

A soft and fungous state of the mucous membrane of the urethra is disadvantageous for lithotritry; a very sensitive urethra is so also; but this extreme sensibility may generally be relieved or removed by the daily introduction of flexible bougies.

The state of the prostate has great influence on the performance of lithotritry. When enlarged it impedes the operation, and its various varieties of form and figure exert a material influence on the operation. “Not to be unjust, however,” says the Baron, “towards the prostate gland, I will here terminate by remarking that it is too often accused of producing difficulties which result from totally different causes.”

The condition and form of the bladder are, of course, of great importance. A large lateral diameter of the bladder is productive of great inconvenience and difficulty. Its form is sometimes injuriously altered by internal haemorrhoids, or accumulations of faeces in the rectum. A bladder presenting pouches requires great care in the manœuvring of the instrument, and when it contains two or three cavities communicating with each other, it offers great difficulties both to the lithotritist and the lithotomist. A bladder of moderate size is the best adapted for the operation. A diseased state of the bladder deserves great attention. Chronic inflammation of the mucous membrane is common, and gives rise to considerations of importance.

“The first of these is, that a patient seldom has a stone and a catarrh of the bladder, without the latter being symptomatic of the former; it is only when the stone has existed for a long time, when the bladder is contracted and thickened, that the catarrh becomes idiopathic, that is to say, that it does not cease when the stone is removed. A proof of this is found in patients who have undergone the operation of lithotomy, and have been cured, but still retain a catarrh of the bladder after the wound has healed. These examples are rare, because, when the bladder is thus catarrhal, hypertrophied, and much diseased in its structure, it is seldom that patients recover after lithotomy. As long as the diseased state of the mucous membrane is not combined with a diseased state of the muscular and cellular tissues, producing the thickening of the coats of the bladder, and that rigidity which prevents its being distended, catarrh does not prohibit the operation.

We have, in fact, performed this operation on several patients who were thus affected, and who did not appear to have any increase of sensibility when the organ was touched; among these cases, two more particularly had so much catarrh of the bladder, that the mucus deposited each night at the bottom of the vessels weighed seven or eight ounces, these patients underwent the operation of lithotritry, and were relieved both from their stone and their catarrh.

In both, we observed, that each repetition of the operation was followed by

an evident diminution in the quantity of mucus, it did not, however, entirely disappear till some days after the patients recovered. In these subjects it was as easy to distend the bladder as in other cases. We do not mean, by these examples, to prove that the bladder may be thus easily distended in every case of vesical catarrh, we only wish to shew, that this affection of the mucous membrane does not prohibit the use of the lithotritic instruments, when there is facility in distending the organ, for the disease is then confined to the mucous membrane only." 341.

When the urine is muco-purulent, with a disposition to hæmorrhage, the operation is prohibited.

" Thus, the mucus of the bladder only prohibits lithotritry, when the stone is very large, and when there is also contraction of the organ, arising from the thickening of its coats ; it is quite clear, that if the stone be small, though the bladder be catarrhal and contracted, lithotritry is practicable, not only on account of the absolute smallness of the stone, but because, being small, it can only be of recent formation, and the contraction of the bladder is not caused by the thickening of its coats, but by the irritation arising from the presence of the calculus, which is then most commonly light, friable, and easily pulverized, but presents small crystals which resemble needle-points. When speaking of the different kinds of calculi, we explained the reason why stones of this sort caused so much irritation and catarrh of the bladder in so short a time." 342.

Paralysis of the bladder offering an obstacle to the discharge of fragments is very inconvenient. Vesical growths and polypi are occasionally met with, and require great care and prudence on the surgeon's part. Sometimes the mucous membrane of the bladder is in a soft fungous state, one very disadvantageous to lithotritry. A varicose state of the veins at the neck of the bladder is unfavourable, and various growths, or diseases around it are so likewise. In some patients the bladder is extremely contractile ; this is obviously more or less inconvenient. Finally, the Baron winds up with a sort of summary of what the lithotritist should be, and what he may expect.

" His art exacts constant attention, continual care, great skill, and long study, to enable him to decide upon the propriety of undertaking the operation, or upon the propriety of continuing it when once begun. As long as the patient is in a favourable condition, middle aged, with a small stone, a large urethra, a moderate-sized bladder, well formed, and not irritable, the means of obtaining a cure may be easily chosen and employed, at least as far as the action of seizing the stone with gentleness, of reducing it to fragments, of taking these fragments and again reducing them, can be easy. But when the circumstances are no longer favourable, when the stone is large, the bladder irritable and contracted, his task is no longer the same ; more skill, more tact are required ; the instruments must be more powerful, more expeditious in their action, and the surgeon must also have the power of deciding quickly, what ought, and what ought not to be done.

The lithotritist cannot always immediately decide upon the propriety of operating or not ; he is often obliged to hesitate : on one side circumstances induce him to believe that it is right to operate ; others may lead him to reject the attempt, and he remains undecided. This indecision might be painful to him, did he not know that lithotritry presents the consolation of safely allowing attempts to be made. The more perfect are his instruments, the greater is their power on the stone ; and the more gently he manœuvres them in the bladder, the greater is the confidence with which he may employ them ; by being careful, and especially prudent, he may try, by applying the instrument itself, whether the operation will be advantageous to the patient." 352.

Here we must conclude. The last division of the work, containing a number of cases in which lithotripsy was performed, will be noticed in our *Periscope*, and at convenient opportunities. We are informed by M. Heurteloup, that another volume is forthcoming, describing the manipulations of the lithotritist, and rendering the information on the subject as complete as he can give it. We need scarcely pronounce any formal criticism on the volume before us. Its perusal has given us a very high opinion of the ingenuity, talents, and judgment of the author. It will do him honour, and in all probability confer more substantial benefit. In parting we would offer one word of advice. Let the Baron be candid with the profession and the public, and he will ultimately find his account in it. Any of that coqueting quackery which inventors of particular arts, or professors of particular divisions of science, are too apt to indulge in, both lowers their respectability, and sooner or later affects their interests. We part from Baron Heurteloup with sentiments of esteem and respect.

XII.

REMARKS ON LACTATION; WITH OBSERVATIONS ON THE HEALTHY AND DISEASED CONDITIONS OF THE BREAST-MILK, &c. &c. By *Edward Morton, M.D. Cantab.* Octavo, October, 1831.

SOME part of this work was published four years ago in a contemporary journal, and we are informed by the author that subsequent experience in infantile diseases has convinced him of the correctness of the views which he then broached. The volume is divided into three chapters, the first of which contains nothing that need detain us here. The second is on the disorders that are frequently produced by lactation, especially protracted lactation.

"In cases of extreme delicacy of constitution, lactation will often produce the worst effects. Many young ladies, on becoming mothers, are incapable of supporting the constant drain to which the wants of their infants subject them—they lose their good looks, become gradually weaker, and as their strength declines, their milk is simultaneously lessened in quantity, and altered in its other properties.

If the suckling be still continued, their debility daily increases, distressing pains in the back and loins succeed; the patients become exceedingly nervous, as it is termed, and are unusually susceptible of ordinary impressions; pain in the head, often of great violence, follows, which, in some cases, is succeeded by delirium, in others, by absolute mania. Nor is this the whole catalogue of ills to which in such cases the unfortunate mother is subjected: the appetite fails, distressing languor is experienced by day, while copious perspirations deluge her by night, and dissipate the last remains of strength—producing a state which may easily be mistaken for, or terminate in, true pulmonary consumption;—finally, the sight becomes progressively weaker, until vision is almost destroyed; the eyelids exude a glutinous secretion, and ophthalmia itself is occasionally induced.

These are the symptoms too often caused by lactation in delicate or debilitated habits, even a few months after delivery ; the same also are observed when suckling has been injudiciously protracted beyond the period to which it should be confined.

A few only of the foregoing symptoms may be noticed, or nearly the whole may present themselves, in the same patient ; and when this happens, unless the cause which has given rise to them be at once detected, and appropriate treatment employed, the most serious consequences may be apprehended." 17.

In such cases, Dr. M. observes, half measures are useless, or worse. Suckling must be discontinued altogether, for reasons which the author states, and which are sufficiently cogent. The obvious dependency of the foregoing symptoms on debility, will lead the practitioner to the employment of tonics and other means of invigorating the constitution. Injudicious practitioners have sometimes recourse to cupping for the head-ache, which of course aggravates the evil. The occurrence of miscarriage from suckling is illustrated by a case in private practice ; and the author says that it is made public at the desire of the patient herself. We shall quote this case.

" Mrs. A——, a lady of delicate constitution, about twenty years of age, three or four months subsequent to the birth of her first child, began to find her milk gradually lessen in quantity ; it had also much changed from its previous appearance, resembling at the time just stated, a yellowish, turbid serum. Her child became emaciated ; and diarrhoea supervening, my professional services were required. My advice was, that the child should be at once weaned, and a suitable wet-nurse, if possible, procured—neither of which suggestions, as will shortly appear, were followed. I urged the necessity of this measure more particularly, because Mrs. A. was daily getting thinner and weaker ; she also complained of great pain in the head and back, and of an increasing dimness of sight, which made her fear she should become blind ; but the mother-in-law of my patient being, unfortunately, of opinion that pregnancy in the latter would not again occur during the continuance of lactation, recommended that the child, although chiefly supported upon spoon-meat, should occasionally be allowed to take the breast ; and this plan, notwithstanding the wish of Mrs. A—— to the contrary, and my own remonstrances on the subject, was adopted—the effects of which were to increase the mother's ailments, as well as those of her infant. Things went on thus for some time longer, when I once more endeavoured to persuade Mrs. A—— to follow my advice, observing, that by an opposite line of conduct she was not only injuring her own health, but that of her child, neither of which, I assured her, in my opinion, would be re-established till the latter had been weaned. I expressed also my complete incredulity as to the non-recurrence of pregnancy in consequence of her infant remaining at the breast ; and I added—' It is my firm conviction that if you be pregnant, or should happen shortly to become so, you will miscarry.' About a week after this conversation she was suddenly seized with flooding, and what I had predicted took place. She now left off suckling, and in about a month, under suitable treatment, completely got rid of all her former complaints ; the child also immediately began to improve." 22.

The third chapter embraces the subject of diseases in children, resulting from protracted lactation. To this source our author traces cases of vomiting, diarrhoea, debility, scrofula, tabes, convulsions, epilepsy—and, lastly, meningitis, with hydrancephalus. This is a long and frightful list of maladies sucked from the breasts of our mothers ! It is to meningitis, however, that Dr. Morton chiefly directs his attention. The conclusions to which our author has come, from experience, are as follow : .

" 1st.—That if children be suckled for an undue length of time, they will be liable in consequence to be affected with meningitis, or inflammation of the investing membranes of the brain.

2dly.—That should they not become affected with the disorder in question during or soon after the time they are thus improperly suckled, they will nevertheless acquire therefrom a predisposition to cephalic disease at some future period of their lives.

3dly. That children who are suckled for an undue length of time, when labouring under other diseases, will be much more liable to have the head secondarily affected, than children brought up in a different manner.

4thly,—and lastly, that the same effects will take place in infants if suckled by women who have been delivered an undue length of time; although the infants themselves may not have been at the breast for too long a period." 26.

The author then proceeds to give an abstract of 52 cases, illustrating the foregoing views. Among these are five cases communicated by Mr. Griffith, an intelligent surgeon in Pimlico. For these histories we must refer to the work itself. With respect to the manner in which protracted lactation causes the complaint, Dr. Morton has no doubt that the meningitis is a secondary affection, arising from the deranged function of the digestive organs—that derangement itself originating in the depraved condition of the breast-milk. Dr. Morton supports this opinion by the authority of other writers, and of Mr. Dendy in particular. The following passage is from the latter writer.

" It may be truly said, that *the infantine disease excited by milk of a deleterious, or simply impoverished quality, 'grows by what it feeds on;*" and we shall witness the internal debility and the infantine disorder running their course together. Tabes is the natural consequence of this error; but its effect is evinced by the occurrence of other disorders. A defective degree of nutrition, as I have elsewhere stated, predisposes the system to become influenced by comparatively slight excitement; and thus, in addition to the direct excitement of disease, it becomes indirectly its predisposing cause. *Under its influence the serous and mucous membranes become readily the seat of inflammatory action.*" 42.

The author concludes his work with an invitation to practitioners, to convey to him such information as they may possess on this interesting subject, in order that he may avail himself of it in a new edition. We think Dr. Morton has adduced sufficient facts and reasons for drawing the attention of practitioners to the diseases resulting from protracted lactation.

XIII.

DR. COLLIER'S CELSUS. Text and Translation in two separate volumes, 1831.

If the old Roman could rise from his tomb, if indeed he ever had one, and perceive the respect which is now paid to his memory, even among those barbarian tribes of Picts and Scots whom the masters of the world attempted to subdue and civilize, his spirit would be gratified! If the medical profession in this country has hitherto paid too little attention to the study of Celsus, they are now making up for their negligence—and if we can form

an estimate of the demand by the supply, this elegant compilator is devoured most greedily by all ranks of the profession. The table at which we write is nearly covered with editions of Celsus, each endeavouring to aim at superior accuracy or cheapness. We have spoken of those sent forth by Dr. Milligan and Mr. Lee. Dr. Collier is certainly entitled to his share of public patronage on account of the learning and labour which he has expended on these two volumes, which are remarkably cheap, as well as neatly executed. It appears that the first edition was exhausted in sixteen months, when the author's interest as well as inclination prompted him to carefully revise and republish his favourite work, with such amendments as should render it more deserving of public approbation. He informs his readers that he has endeavoured to be "as literal as common sense would permit," requesting such of his readers as desire a closer translation to bear in mind that he "never undertook to murder Celsus, and then to subject him to minute dissection, in order that a few dead fibres of his mangled corse might be submitted to the inspection of 'cruel examiners'; but to transfer him to their notice physically and essentially, body and soul, with so much spirit infused into the translation as might at least give a faint idea of the living original." After some cutting remarks on translators, the worthy Doctor informs us that "sympathising with that class of medical students who need every encouragement, he has prepared an *ordo verborum* of the first and third books, after such a method, that 'he who runs may read,' which he shall direct the booksellers to supply separately at little more than the cost of print and paper."

In our last number we gave a specimen of Mr. Lee's translation. We shall here select a different place and give a specimen from each of the two authors, by which our readers may form some idea of their comparative merits.

"*Ut alimenta sanis corporibus agricultura, sic sanitatem ægris medicina promittit. Hæc nusquam quidem non est. Siquidem etiam imperitissimæ gentes herbas, aliaque prompta in auxilium vulnerum, morborumque, noverunt. Veruntamen apud Græcos aliquanto magis quam in cæteris nationibus exulta est, ac ne apud hos quidem à prima origine, sed paucis ante nos seculis; utpote cum vetustissimus auctor Aesculapius celebretur. Qui quoniam adhuc rudem et vulgarem, hanc scientiam paulo subtilius excoluit, in Deorum numerum receptus est. Hujus deinde duo filii, Podalirius et Machaon, bello Trojano ducem Agamemnonem secuti, non mediocrem opem commitionibus suis attulerunt. Quos tamen Homerus non in pestilentia, neque in variis generibus morborum aliquid attulisse auxillii, sed vulneribus tantummodo ferro et medicamentis mederi solitos esse, proposuit. Ex quo appetat, has partes medicinæ solas ab his esse tentatas, easque esse vetustissimas.*"

TRANSLATIONS.

LEE.

"As agriculture provides aliment to the sound body, so medicine does health to the sick. Indeed no part of the world is without this art. For the most uncultivated nations know the properties of herbs, and other prompt remedies for wounds and diseases. But it

COLLIER.

"As agriculture to those who are in health, holds out the expectation of aliment, so medicine promises to the sick a recovery from disease. There is not a spot on the habitable globe where the healing art has not some footing; for even the most uncivilized tribes have

was cultivated by the Greeks, a little more than other nations, yet not even by them from the origin of that people, but a few ages before us ; as it would appear Æsculapius is celebrated as their most ancient author, who, because he cultivated this art, hitherto rude and barbarous, a little more skilfully, was received into the number of their gods. Afterwards, his two sons, Podalirius and Machaon, having followed their general, Agamemnon, to the Trojan war, did not render little assistance to their fellow soldiers. But Homer has represented that they did not attempt to cure pestilence nor various other kinds of diseases, but were in the habit of dressing wounds by the knife and medicines only : by which it appears, they were accustomed to treat surgical cases only, and that this was the most ancient."

some knowledge of herbs, and other remedies easily procured for the relief of wounds and diseases. It has been advanced by cultivation, however, among the Greeks more than among other nations ; nor with them from their first origin, but a few centuries only before our own time ; for Æsculapius is celebrated as its most ancient author, and was deified for having more ingeniously cultivated a science, which, up to his time, had been devoid of arrangement and in low estimation. His two sons, Podalirius and Machaon, followed in the train of Agamemnon, the commander of the Trojan expedition, and afforded no inconsiderable assistance to their fellow soldiers in arms ; not that Homer mentions them as curing the plague, or as treating any of the various kinds of disease ; but describes them as in the habit of treating wounds only, by operations and medicine. So that it is manifest they practised these departments exclusively, and that they are the most ancient."

It will be abundantly evident that Dr. Collier has a great dislike to *literal* translation. Thus, in the first sentence, " promittit," in Celsus, is rendered into English by three words instead of one, viz. " holds out expectation." Promittit serves both for agricultura and medicina—and we see no reason why Dr. Collier might not have followed the example, and made one English verb (promise) serve for the two nominatives. Mr. Lee goes closer to the original, making the word " provide" answer for both purposes.* In the second sentence of Dr. Collier, we find the word " nusquam," in Celsus, translated thus : " not a spot on the habitable globe." In Celsus, " hæc nusquam quidem non est" contains twenty-one letters—Dr. C's. translation contains *sixty-nine* letters, or more than triple the quantity of type. It is clear that the Doctor is determined not to fall into the fault of *obscenity* by too much attention to *brevity*.

We have indulged in this little piece of verbal criticism for mere amusement, and do not by any means find fault with Dr. Collier's translation. Of the two versions, we would say that Dr. Collier's is more free and easy—Mr. Lee's more stiff and literal. But let us look, for one moment, to this celebrated opening sentence of the Roman sage, which has commanded ad-

* We would translate the sentence thus : " As agriculture promises food to the healthy, so medicine promises health to the sick." Here there are precisely the same number of letters in the original and in the translation, viz. 70, although the verb " promises" is obliged to be repeated in the English version, while it is understood in the Latin. The translation is strictly literal, and we leave it to our readers whether it is not as harmonious (it is certainly more terse and faithful) as the more wordy translation of Dr. Collier.

miration for nearly two thousand years. In our humble opinion, there is just as much analogy between agriculture and physic, as there is between a steamer and a stable. Agriculture multiplies the fruits of the earth; physic corrects the disorders of the body. Agriculture, in fact, bears a greater similitude to matrimony than medicine. The one reproduces vegetable life—the other animal.

Dr. Collier comes to the conclusion, that Celsus *must* have been a *practitioner* himself, else he could not have compiled so well from the writings of others. We have some doubts of the correctness of this inference. That Celsus *studied* medicine there can be no question; but that he should have actually *practised* it, there seems no positive proof afforded by the fact of an elegant and eloquent compilation. Suppose some very clever thesis of some very clever student were to turn up two thousand years hence—would it not be inferred that he was a *practitioner* of medicine, although he might never have had the care of a single patient? Our own opinion is, that Celsus was an accomplished scholar, a man who studied various sciences—and among others medicine—but who did not practise the healing art. He wrote well on military tactics and agriculture; ergo, by Dr. Collier's argument, he must have been a soldier at one time, and a farmer at another!! For our own parts, we think it would be much more easy for a literary man to compile a treatise on physic without being a physician, than to write on military tactics without ever mixing with cannon and gunpowder. That practice is not essentially necessary for elegant compilation, we could adduce some strong reasons—perhaps some striking examples. A clergyman (the Reverend Mr. Clark) wrote the best treatise on *naval* tactics that ever was penned, without ever having his foot on board of a ship. What will Dr. Collier say to this? The late Dr. J. M. Good compiled an eloquent treatise on medicine—the *worst parts* of which are those where he is swayed by his own very limited practice. The great bulk of his "*Study of Medicine*," as he, with much naivete, styles it, was the result of *library* practice—and if it had all been derived from this source, it would have been better, perhaps, than it now is. But we shall let Dr. Collier give his own reasons for the conclusion to which he has come.

"If I may be allowed to record my opinion, I would venture to say, his own work and the habits of his order would go to prove he was not a *money-making Physician*, for he severely condemns wholesale dealers in disease, and declares it to be impossible for any one person to attend and do justice to a great number of patients: he was not a *Hospital Physician*, for he animadverts likewise upon that class of practitioners as *deficient in care and discernment*; neither was he a servile imitator of the practice of his contemporaries, for he authoritatively recommends several modes of treatment which he declares to be in his time universally neglected."—*Preface*, vi.

We have marked a few words in Italics, to shew that Dr. Collier is not very favourable to those physicians who have many patients—who make much money—or who are attached to hospitals. But our author ought to recollect that, generally speaking, physicians have *very few patients* for a long time before they come to have *very many*—that they are in the receipt of *very few fees* for many years before they accumulate a fortune—and that, although chance, interest, and nepotism, too frequently throw young mer-

into the charge of hospitals, yet these schools are the very best for the acquirement of sound knowledge.

"What was he then? A literary charlatan, who compromised the interests of posterity, by authoritatively laying down precepts concerning the life and death of his fellow-creatures, without having repeatedly put those precepts to the test of experience? He could not do it. He would have been the laughing-stock of Rome. Let us examine the following passages: 'Ego autem medicamentorum dari potionis, et alvum duci non nisi raro debere, concedo.' Lib. iii. cap. 6. What! Concession upon a practical point, emanating from a man who never practised? It must have been a modest concession with a vengeance! 'Ego tunc hoc puto tentandum, quum parum cibus,' &c. Lib. iii. cap. xi. If not a practitioner, of what consequence was it to the physicians of Rome, what he thought? 'Ego utique, si satis virium est, validiora; si parum imbecilliora auxilia, praefero.' Lib. iii. cap. xxiv. On what could he have grounded his preference, if not on his own practical results in a number of cases? 'Ego experimentis quemque in se credere debere,' &c. Lib. iv. cap. xviii. 'Ego eundem quidem hominem posse omnia ista praestare concipio.' Lib. vii. Praef. If not a practitioner, he would not have formed such a conception. 'Ego autem cognovi, qui, succisa lingua,' &c. Lib. vii. cap. xiii. sect. 4. 'Ego sic restitutum esse neminem memini.' Lib. vii. cap. vii. sect. 6. It were easy to subjoin fifty such passages; let these suffice.

Now could he write so at Rome, where it must be notorious whether he really practised or not? Or can it be conceived any man could write so exactly upon medical and surgical subjects without being versed in practice?"—*Preface*, vii.

There is nothing in any of these passages to prove that Celsus practised medicine. Nothing is more common than for a student of medicine to express strong opinions, probationary or condemnatory, of that which is done or said by the actual practitioner. Every inaugural dissertation exemplifies this. In the very next page but one to that whence we quoted the above passage, Dr. Collier affirms, that "the fixed purpose of his life (Celsus) seems to have been, *to gain knowledge and to transmit it to posterity*." If this were the case, and it probably was so, what would Celsus care for the remarks of the Romans? One thing is clear, that the work is a *compilation*, and whether the author was a library or a general practitioner, it is of little use now to enquire.

Dr. Collier is sometimes obscure, though not from addiction to brevity. It would not be easy to decipher the Doctor's meaning in the following passage.

"He (Celsus) was no advocate for pharmaceutic medicine. Diet and the digestive organs were his watchwords. *Let our modern Celsus candidly confess his early obligations to the Roman, and save future historians the pain of inflicting censure: it would be a most righteous retribution, redounding to the honour of both.*"—*Preface*.

We believe that "glorious Johnny" was in the land of the living when Dr. Collier penned the above. If he alluded to Abernethy, (and we cannot imagine any other person to whom he can allude) we may safely say that that talented, but eccentric, practitioner was little indebted to Celsus, or to any other ancient writer, for his ideas or practices. We very much doubt whether he ever read a page of Celsus or Hippocrates in his life.

Cheap as is this edition of Celsus, Dr. Collier might have rendered it still

cheaper, or, at all events saved himself some considerable expense, by the omission of plates, representing ancient baths, instruments, and characters, now totally useless. Of what possible utility to a medical book can be a large plan of the baths of Diocletian in Rome? baths never intended for medicinal purposes, but for the indulgence of luxury and debauchery among a degenerate and slavish people. It is true that the Roman Thermæ have been lauded by thoughtless travellers, on account of their magnitude and magnificence, while the pious Eustace has characterized the daily use of these baths among the Romans as a “*semi-virtue*,” deserving of imitation in Britain!

“ This SEMI-VIRTUE—this daily and promiscuous congregation of *both sexes* in Stygean hot-baths—this scene of indecency—this sink of sensuality, against which the edicts of Adrian and Aurelian were issued in vain—scenes which so scandalized (or rather mortified) the incestuous, murderous, meretricious AGRIPPINA, that she could not bear the idea of the Roman fair sex being on a par with herself in licentiousness—and, therefore, constructed FEMALE BATHS on the Viminal Hill, which, we may well believe, were little frequented:—Such are the *semi-virtuous* establishments which the simple, and, I have no doubt, pious EUSTACE bewailed the want of in his native land!”—*Change of Air, or Diary of a Philosopher*, 2d Ed. p. 158.

But this is a digression, and we shall now select a short chapter from Dr. Collier’s volumes, as a sample of text and translation, from which we have no doubt the reader will come to the conclusion, that the author has executed his task with considerable ability.

CELSUS.

“ QUEM INTERDIU VEL DOMESTICA VEL CIVILIA OFFICIA TENUERUNT, HUIC TEMPUS ALIQUOD SERVANDUM CURATIONI CORPORIS SUI EST. Prima autem ejus curatio exercitatio est, quæ semper antecedere cibum debet: in eo qui minus laboravit et benè concoxit, amplior; in eo qui fatigatus est, et minus concoxit, remissior. Commodè verò exercent, clara lectio, arma, pila, cursus, ambulatio; atque hæc non utique plana commodior est; siquidem melius ascensus quoque et descensus cum quādam varietate corpus moveat, nisi tamen id perquām imbecillum est: melior autem est sub divo quām in portico: melior, si caput patitur, in sole. quām in umbrā: melior in umbrā quam parietes aut viridaria efficiunt, quām quæ tecto subest; melior recta quām flexuosa. Exercitationis autem plerumque finis esse debet sudor, aut certè lassitudo quæ citra fatigationem, sit; idque ipsum modò minus, modò magis faciendum est. Ac ne his quidem, athletarum exemplo, vel certa esse lex vel immodicus labor debet. Exercitationem rectè sequitur modò unctio, vel in

TRANSLATION.

“ HE WHO IS DAILY OCCUPIED, WHETHER WITH PRIVATE OR PUBLIC AFFAIRS, OUGHT TO SET APART SOME PORTION OF HIS TIME FOR THE CARE OF HIS HEALTH. Now the chief means of preserving this is exercise, which ought always to precede a meal, more severe with him who has been studying less hard, and whose concoction is perfect; gentle with him who is exhausted, and who has concocted but in part. Reading aloud, martial weapons, the ball, running and walking, are means of exercise convenient enough; the last is more beneficial on ground not too level; for a slight ascent and descent affording more variety to the motion of the body, is preferable unless this be extremely weak. Exercise in the open air is better than that in a portico; better, if the head permit, in the sun than in the shade, better in the shade of walls and groves, than in that of a covered building; better in a straight than in a winding direction. Most generally it should be continued until some sweating ensues; or at least a lassitude not amounting to fatigue: sometimes to a greater,

sole vel ad ignem ; modò balneum, sed conclavi quàm maximè et alto et lucido et spatiose. Ex his verò neutrum, semper fieri oportet, sed sàepius alterutrum, pro corporis naturâ. Post hæc paulùm conquiescere opus est. Ubi ad cibum ventum est, nunquàm utilis est nimia satietas ; sàepè inutilis nimia abstinentia : si qua intemperantia subest, tutor est in potionē quàm in escâ. Cibus à salsamentis, oleribus, similibusque rebus meliùs incipit: tûm caro assumenda est, quæ assa optima aut elixa est. Condita omnia duabus de causis inutilia sunt, quoniam et plus propter dulcedinem assumitur, et quod modo par est, tamen ægrius concoquitur. Secunda mensa bono stomacho nihil nocet: in imbecillo coascessit. Si quis itaque hoc parùm valet, palmulas pomaque et similia meliùs primo cibo assumit. Post multas potionēs, quæ aliquantūm sitim excesserunt, nihil edendum est: post satietatem, nihil agendum. Ubi expletus est aliquis, faciliùs concoquit, si quicquid assumpsit, potionē aquæ frigidæ includit: tûm paulisper invigilat, deindè benè dormit. Si quis interdiù se implevit, post cibum neque frigori neque æstui, neque labori, se debet committere: neque enim tam facile hæc inani corpore quàm repleto nocent. Si quibus de causis futura inedia est, labor omnis vitandus est.” 16.

and sometimes to a less extent. For them, there are not, as with wrestlers, any certain rules, nor ought their exercise to be immoderate. Exercise is rightly followed up sometimes byunction, whether in the sun, or near the fire; sometimes by the bath, but in a very lofty, well lighted, and spacious apartment. But in truth, neither of these ought uniformly to be practised; but this or that more frequently, according to the nature of the constitution: afterwards a little rest is necessary. When meal-times arrive, surfeiting never does good; excessive abstinence often harm; but if intemperance be committed, it is safer in drink than in food. It is better to begin a repast with salsaments, vegetables, and other things of that nature: then, meat should be taken, which is best roasted or boiled. All ragouts are pernicious, for two reasons; because they are taken to excess on account of their agreeable flavour, and because even in moderation they are digested with difficulty. A dessert does no harm to a strong stomach, but turns sour in a weak one. He, therefore, whose health is indifferent, more properly takes his dates, orchard fruit, and the like, at an early period of the meal. After drinking considerably more than thirst requires, one should eat nothing; after a surfeit, one should do nothing. Whenever a person has eaten too heartily, he will concoct more easily by concluding his meal with a draught of cold water, remaining a short time awake, and then taking a good nap. He who has fed too heartily, ought neither directly afterwards to expose himself to cold, nor to heat, nor to labour; for these things are not so hurtful when digestion is suspended, as they are on a full stomach. Therefore, when, no matter from what cause, it becomes expedient that we should fast, all labour should be avoided.” 17.

We have a high respect for Dr. Collier's classical acumen and literary research, and though we have thrown out a few trifling critical remarks, we strongly recommend the work to our professional brethren.

XIV.

EPIDEMIC CHOLERA.

Another plague of more gigantic arm
Arose—a monster never known before
Reared from Cocytus its portentous head.

It seemed the general air,
From Pole to Pole, from Atlas to the East,
Was then at enmity with human blood.

THE far distant storm, which startled our countrymen on the banks of the Ganges fifteen years ago, and has since ravaged, with devious but too fatal course, every territory from the Straits of Malaccâ to the Pas de Calais, has at length burst on our shores! In Asia, the fiend was contemplated by us with curiosity—in the wilds of Russia, with suspicion—in Germany, with alarm—but on English soil, with TERROR!

Nothing but lamentable sounds was heard,
Nor aught was seen but ghastly views of death—
Infectious horror ran from face to face,
And pale despair.

Whether the pestilence, like the panic, may spread over this fair Island, we cannot tell. We, with many others, hoped and anticipated that the scourge would prove less destructive in England than in other countries; and we do not yet despair that our hopes may be realized. But, as it is not impossible that the enemy may take up his quarters on the banks of the Thames before this paper sees the light—and as the dread, or even the danger, of the epidemic cannot be expected to cease with its annual mitigation or temporary disappearance, we deem it right to select, from the chief records of this disastrous pestilence, such portions of information as may be useful to our readers in the hour of trial. In this article we shall not contend for victory, as too many party-writers do, but for truth and utility. We shall endeavour to steer a middle course between the exclusive contagionists and anti-contagionists—having long been convinced that diseases arising from aerial or terrestrial influences, far beyond our control, have, in the hovels of the indigent, in crowded populations, in concentrated filth, and in the absence of ventilation, taken on a character of infection or communicability which they did not originally possess, and of which they are quickly deprived under opposite and favourable circumstances. The readers of this Journal are well aware that this is the doctrine which we have invariably maintained in respect to fever—and as cholera is probably nothing more than the initiatory stage of some kind of fever, the same doctrine may be safely applied to it. We are free to confess, however, that we are infinitely more favourable to the views of the exclusive anti-contagionists than to those of their opponents, the exclusive contagionists, because we are convinced that their doctrines, on the whole, are infinitely more beneficial to society and to the sick, even if they are wrong, than those of the opposite sect. But

we are also convinced that the doctrine of CONTINGENT CONTAGION will be that which is the most safe in practice, and which will be ultimately adopted by the great majority of medical practitioners in these Isles, should they unfortunately have the means of forming their opinions from actual observation.

I.

The first document which we shall notice is that of Professor Lichtenstadt, of St. Petersburg, giving the official Russian Reports of the progress of cholera from Asia to Europe, referring our readers to our Edinburgh contemporary for a fuller account of the Professor's work, if they deem it expedient.

It appears, then, that the first case of cholera occurred on the 26th Aug. 1829, at Orenburg, on the river Ural, about 400 miles north of the Caspian, and 1000 miles north-east of Tabreez, where it prevailed *seven years* previously. On the above day, a man was brought to the military hospital affected with bilious vomiting, diarrhoea, exquisite pain in the abdomen, shrunken features, blue lips, cold extremities, cramps, imperceptible pulse, excessive anxiety. Being treated as for an *inflammatory complaint*, he sunk within twelve hours. In a week after this, a woman died of suspicious symptoms. In another week, viz. on the 8th September, a third case occurred, and terminated fatally in twelve hours.* The case is detailed by Dr. Sokolov, and is as follows :

"The disease began at two in the morning, with a dreadful purging, which returned every minute. Although the weather was cold and wet, the patient went out of doors to obey the calls of nature, barefooted and undressed, and without any precaution. About five o'clock he was without feeling, quite powerless, and affected with constant cramps. At six I found him again sensible, but with sunken pale-blue cheeks, dimness of the eyes, coldness of the feet and hands, and bedewed with clammy sweat. He was tossing about, and complaining of trembling of the hands, a sense of oppression at the pit of the stomach, and intolerable thirst. The vomiting, which, according to his own account, commenced much later than the purging, was at this time less frequent than it had been ; but the alvine discharges continued to recur incessantly, and were passed involuntarily. The exhausted, powerless condition of the patient, in particular his completely imperceptible pulse, both at the wrist and over the heart, the stiffness of the limbs, the coldness of the tongue, belly, and praecordia, left me no hope of his recovery. The administration of opium with oil of peppermint and ether checked the vomiting only for a short time ; anodyne clysters had no better effect on the diarrhoea ; and warm frictions, spirituous drinks, and even the hot bath were resorted to without success to restore the temperature and bring back the pulse. An unsuccessful attempt was in the last place made to draw blood from a vein ; and soon afterwards the man expired. Twenty minutes after his last breath, and when the corpse had been already washed and dressed, it was affected all at once with frightful movements. Convulsive motions took place in the hands and feet, like those excited by galvanism, commencing first

* None of these people came from infected places, or had communication with any people coming from such. In fact, no trace whatever could be found of the way in which the cholera got into Orenburg. Let the reader remember this when we come to Sir William Crichton's statement.

in a few muscular fibres, especially in the neck and thighs, extending in a vermicular manner, and suddenly producing bending of the head, and agitation and elevation of the feet. These spasms continued with intervals for ten minutes, becoming in the end faint and rare. The same phenomena, though in a less remarkable degree, were observed on another occasion only, but so long as six or seven hours after the termination of the symptoms of the disease.”*—P. 115.

Next day two other cases occurred—on the 10th September two more, after which the disease spread rapidly and became prevalent. Between the 9th September, when the cholera commenced, and the 20th November, when it ceased, eleven hundred cases occurred, of which two hundred proved fatal. The population of Orenburg is about eleven thousand souls—so that a tenth part suffered from cholera.

About the 23d of September, or a fortnight after commencing in the capital, it broke out at RASUPNA, 60 miles West of Orenburg—and at various dates it shewed itself in various parts of the Orenburgh Government. By the 23d February, 1830, the disease was every where extinct in the said Government.

The symptoms need not be enumerated, as the case already detailed embraces nearly the whole of them—or, at all events, the essential features. The post-mortem appearances are very imperfectly stated by the Orenburg physicians. They agree, however, in saying that marks of inflammation were found in various parts of the intestinal canal. Several of them affirm that these marks were far from being invariably present; and as they do not state the *appearances*, but only the conclusions in their own minds, we may safely doubt whether the said appearances justified the term inflammation. We every day see even eminent medical men, in this country, set down cadaveric changes for living inflammation!

The treatment was grounded on our Indian practice. The Orenburg physicians drew blood from the arm, when it could be done, and prescribed calomel in scruple doses with opium, while every kind of stimulant and caloric was applied to the surface. It is gratifying to find that, where prompt medical assistance was obtained, the mortality of the disease was comparatively small, while in villages and other places deficient in medical skill, the mortality was very great.

We now come to the supposed mode of introduction of the disease, and the manner of its propagation afterwards. We need hardly tell our readers that in India the contagious nature of the disease was denied by 99 out of every hundred medical men in those parts of the world. The Russian Government, however, came to very different conclusions, and early adopted regulations of the non-intercourse kind, together with quarantine, such as are in use against the plague. It was found quite impossible to trace the introduction of the disease into Orenburg. The caravans, the rivers, the roads were all suspected by the contagionists, but none of these could be proved to be guilty. The last caravan arrived thirty-five days before the breaking out of cholera at Orenburg, and the travellers were all in good health. The idea of its being conveyed in the packages of the caravan was

* “These muscular contractions after death were also occasionally observed in the cholera of the East Indies.”

too ridiculous to be seriously entertained. Failing in these points, the contagionists suspected some neighbouring tribes of half savages; the Kirghis-Kaisaks, dwelling or wandering on the southern and eastern side of the river URAL. These Kaisaks happen to have a very effectual mode of purifying their camps and extinguishing contagious diseases in the bud—namely, by instantly abandoning their sick to the grim tyrant Death, and moving off to a distance of fifty or sixty miles! We may therefore acquit the said Kaisaks of the charge of introducing the cholera into Orenburg.

The foreign introduction of the epidemic being negatived—or at least, "*not proven*," the mode of propagation, after it had once commenced, is the next most important subject of investigation. The majority of the Orenburg physicians who actually witnessed the disease, (and the same will be seen respecting those of Moscow afterwards,) were decidedly against the idea of cholera being communicated from person to person. The general opinion, in Russia, is said to be in favour of contagion. Some attribute it to terrestrial exhalations—a source which our Edinburgh contemporary considers quite preposterous, though it is infinitely the most rational doctrine that has yet been broached—and not the less rational because it was the firm belief of Sydenham himself, no mean observer. Some have thought that a superabundance of the causes of common cholera, with some peculiar state of the constitution, effected the epidemic; while others have attributed it to a certain but incognizable electric state of the air or earth.

It appears that the Orenburg physicians were not only unfavourable, *at the beginning of the epidemic*, to the idea of contagion, but that they encountered facts which were totally irreconcileable with that doctrine. In the *subsequent progress* of the malady, however, they met with facts of a contrary nature—and before the termination of the cholera, many were staggered in their opinions—and a few became decided contagionists. This might be expected; for unbiased observers, untrammelled by parties and sects, have long ago come to the conclusion that an epidemic, originating in some general causes, may occasionally take on a contagious character in its progress, thus adding to the spread and to the fatality of the disease. But even with this admission, in its fullest latitude, we can see nothing like unequivocal proofs of contagion in the epidemic cholera of Orenburg. Our Edinburgh contemporary, who evinces throughout a strong tendency to the doctrine of contagion, admits that the facts in favour of this doctrine amount only to presumptive, "but by no means to very strong proof." We would say that they hardly amount to presumptive evidence—and therefore we shall not squander away our time or the time of our readers in detailing them. More positive evidence, for or against, will be produced in the sequel. We shall make one short extract from the Edinburgh Reviewer, which will shew the weakness of the contagion cause.

" The last argument in favour of contagion,—the immunity enjoyed by certain small districts in the heart of an infected country, whenever intercourse was cut off with the places where the disease prevailed,—is certainly a fact of much interest and some weight. At the same time so many instances of similar immunity occurred where the fact of free exposure to the supposed contagion could not be called in question; and so many instances also occurred where the disease spread in defiance of the quarantine, that one is tempted to ascribe the escape of the shut up districts, which, after all, were very few in number, to

accident, or at least to some other cause than the suspension of human intercourse."* 132.

We have observed that our Caledonian contemporary treats the idea of terrestrial emanations, as the cause of epidemic cholera, with complete contempt. We venture to surmise that the Reviewer has never had opportunities of studying the subject in a practical way—and we are quite certain that he is but little acquainted with medical topography. Thus because Orenburg "is situated in an extensive plain, abounding in undulations to diversify its surface, destitute of lakes and marshes—traversed by clear streams, and not more wooded than is required to beautify the landscape," it is concluded by our sagacious northern critic that the said city is "one of those chosen spots on the globe, which the physician would select for its exemption from all the circumstances of locality that are apt to engender endemic diseases." Yet in the above sentences, he has described, with the most scrupulous exactness, the *Campagna di Roma*—the very focus of pestilence and death! It is really astonishing that a reviewer of the middle of the nineteenth century should entertain the old and trite, and *false* notion that a swamp or a marsh is essential to the production of malaria. Why every medical tyro knows that the most fertile, the most beautiful portions of the earth are the very hot-beds of pestilent emanations. We know too, that localities, which remain for years or even centuries, healthy, suddenly, and without any evident change in appearances, become extremely inimical to human life. How can this possibly be accounted for, except by the supposition that subterranean agents are at work, which cause emanations to rise from the bowels of the earth, without ostensible causes on its surface? These emanations may be wafted along by winds—or they may rise from the earth in a direction contrary to the strongest gales, as they did in India. Such irregular progressions are now taken hold of to support the doctrine of a contagious origin; but they will prove baseless. The cholera is now leaping from city to city, and from shore to shore, in despite of quarantines, and will, we have no doubt, continue to do so.

Another objection urged by the Edinburgh Reviewer to terrestrial exhalation as the primary cause of cholera, is the fact that "elevation above the plain where cholera prevailed did not constitute any protection." He adduces an instance of a village 1400 feet above the plain becoming affected with cholera. Did the learned reviewer never hear of the convent of Camaldoli and a hundred other elevated situations in Italy, where malaria is nearly as fatal as on the plains? Does the reviewer not know that, generally speaking, elevated points in the neighbourhood of malarious plains suffer more than the plains themselves, both in the eastern and western hemisphere? That there was some malarious constitution of the atmosphere prevailing at Orenburg, during, if not previous to the epidemic cholera, is rendered tolerably probable from the following statement of Dr. Onufriev, physician for the circle of Orenburg.

" During the prevalence of the epidemic, there was scarcely a single inhabitant of the City of Orenburg who had not some symptom of disordered digestion. One complained of oppression and pain in the breast; another of head-ache, slight sickness, looseness of the bowels, and the like."

* Ed. Journal, July, page 132.

II.

CHOLERA OF 1830. By Sir WILLIAM CRICHTON.

The next document which we shall insert is that of Sir William Crichton, the very title of which shews that Sir William is a party-man, and consequently went in keen search of all facts or opinions that bore on his own side of the question.

" An ACCOUNT of the Introduction and Progress of the Cholera Morbus in Russia to the end of the year 1830, exhibiting the principal facts which strengthen the belief of its being a contagious disorder,* extracted from a Memorial presented to the Medical Council of St. Petersburg by Sir William Crichton, Physician in Ordinary to the Emperor of Russia, &c.

In the Spring of the year 1830 the first authentic accounts of the Cholera Morbus having appeared in Persia were received by the Medical Council of St. Petersburg. It spread itself from the Province of Corasan to Tabrez, the residence of Abbas Mirza, where it made great havoc. A number of the Russian mission to that Prince fell a sacrifice to it, and Prince Dolgorouky, the Russian Minister at the same Court, was saved with great difficulty from a serious attack of it.

In the beginning of July the disease penetrated the Russian Provinces of Schirvan and Bacon, from whence it spread by land as far as Tiflis, and by sea from the port of Bacon to Astracan.

It broke out in these two last-mentioned towns nearly at the same time; that is to say, on the 20th of July. It appears from the accounts we have received, that neither at Tiflis nor at Astracan any precautions were taken to prevent its spreading further, probably from its not having been thought contagious, so that it extended with rapidity from Tiflis throughout Georgia and the Province of Caucasus, always following the principal roads.

At its first appearance at Astracan (which took place soon after the arrival of a vessel from Bacon, on board of which eight men had been seized during the voyage, with the Cholera, and had died of it,) thousands of people, employed in navigating the Volga, together with fishermen of that river, made their escape from the town, the first re-ascending the Volga, the others going up the river Pural or Jaik. The disorder showed itself at Gowrieff on the 26th of July, at Ouraesk on the 3d of August. Let us now observe its course along the Volga, the great line of communication by which the disease penetrated into the interior of Russia. At Senolayerisk the Cholera broke out the 22d or 23d of July, at Krasmoyer the 25th of the same month, at Tzaritzen the 6th of August, at Donbooka and Saratoff the 7th, at Khoalinsk the 19th, at Lamara and Neigni Novogorod the 27th, at Kostroma the 3d of September, at Zaroslaff the 6th, and at Rybinsk the 11th of the same month. In all those places the first victims of the disease were either navigators of the Volga, or individuals arrived from places where it already raged.

A Cossack, who had been sent the beginning of August from the station named Katchalinskara on the Don, to buy provisions at Donbooka on the Volga, died of the Cholera on the 7th, after his return to the station. After that circumstance, the malady spread successively through the different Cossack villages along the river Don; without enumerating all these, suffice it to say, that the first deaths from Cholera at Novetcherkash, the principal town of the Cossacks, took place

* What business had any man searching after truth to prejudge the whole inquiry in the very title of the paper? But this is the way with all partizans. When they set out on their travels they take good care to keep one eye shut!—

on the 18th of August, at Rastaff, its ravages began some days later, and that on the 9th of September it had penetrated as far as Jaganrog. A great number of persons of all ranks escaped from Saratoff, (a town containing 40,000 inhabitants,) and took refuge in the next government of Peusa, but the Cholera did not fail to follow them, and commenced its depredations in that province on the 13th of August.

The first death at Kasan was on the 9th of September, an individual who had come there from Nigni Novgorod.

It has not been exactly ascertained who was the first individual who died at Moscow of the disorder, as most of the Physicians of that city did not believe in its having visited them, consequently no exact information was then taken of those who were attacked with it. There is, however, reason to believe that the first victim was a student, who had leave of absence from Saratoff, and whose servant died on the road thence to Moscow.

Of the Causes.

Although there is still a difference of opinion among physicians on this subject, the Medical Council of St. Petersburg is obliged to acknowledge that the exciting cause of this disorder (and the only one well proved,) is a specific contagion, less virulent, perhaps, than that of the plague, and requiring a certain pre-disposition in the human body for its development, but which contagion certainly exists; numerous proofs of this fact were presented by the epidemic of 1829 and 1830.

1st.—The progress of the Cholera along the high roads.

2d.—The remarkable circumstance that *the first who died of it wherever it appeared, were individuals who arrived from some infected place.*

3d.—That the places where immediate precautions were taken, were not attacked by it, as for example, the small town of Sarepta (inhabited by a colony of Moravians), situated on the high road from Astracan to Tzaritzen, and only twenty-five versts from the latter place. Also, several farms and country-houses near Astracan, and German colonies in the government of Saratoff, the military school of cadets at Moscow, &c. around all of which the malady raged furiously.

4th.—That in Moscow, which contains at least 200,000 inhabitants, there have been since the 16th September, up to the present instant, 6th January, only 6,000 or 7,000 sick, or one twenty-ninth of the population; an incredibly small number, if we look for the general cause of Cholera Morbus in atmospheric influence.

Means of Prevention.

Considering the contagious nature of the disease, and the rapidity with which it spreads, the Government, at the recommendation of the Medical Council, ordered quarantines to be formed on the frontiers of every province in which the disease raged; and afterwards entirely to surround all places where it existed. After the experience of the epidemic in 1829, the Medical Council found that a quarantine from fourteen to twenty-one days was sufficient to ascertain the state of health of any person coming from an infected place, instead of confining him six weeks, as in the case of the plague. *During the whole course of the years 1829 and 1830, there is not a single instance that can be relied on of the contagion being communicated by articles of dress or furniture, &c.**

Fumigations made with chlorines, were generally employed as means of dis-

* If the disease were really contagious, would not clothes be very apt to convey it from place to place. Would the clothes of a typhous or a variolous person be so safe and innocent?

infection; but experience does not justify us in speaking positively as to their efficacy."

On this document of Sir W. Crichton we shall make few comments, for, in truth, we consider it not only of no value, but *worse* than useless. When we find in it so many gross errors as to facts, within investigation, we may fairly conclude that in various other parts, at the truth or error of which we cannot get, there is no lack of special pleading—to give it no worse name. Thus let the reader peruse the second reasons which Sir William triumphantly adduces as proof that the cholera morbus everywhere originated in contagion. "The first who died of it wherever it appeared, were individuals who arrived from some infected place." Now the first victims to the disease at Orenburg came from no infected place, and no trace of contagious introduction could ever be discovered. The second reason is equally futile, because it assumes for fact what is *not fact*. In a *fortnight* after the cholera broke out at Orenburg it started forth all at once at Rasupna, 60 miles from Orenburg !! Truly this choleric traveller must have worked hard to travel 60 miles in a fortnight, infecting all the towns and villages on the "great roads." The infection along the road, however, existed only in Sir William's own brain, where there is, no doubt, an ample manufactory for all such kinds of stuff. Sir W. tells us that it has not been ascertained who was the first individual who died of cholera at Moscow; but he soon makes up for this want of information, by *supposing* that the first victim was a student, who had leave of absence from Saratoff! Alas ! alas ! for medical science, when such bolsterings up of preconceived hypotheses are sent forth into the world as historical facts.

But Sir William's third reason in favour of contagion is the best of all. Only one in 29 of the inhabitants of Moscow suffered from the disease ! This reason is too ridiculous to deserve notice. Does Sir William remember that almost the whole of the inhabitants of Orenburg and Moscow laboured under indisposition of some kind, at the time of the cholera? Was this not a pretty certain sign of some general cause in the air? Upon the whole, Sir William's document is a very poor specimen of the arguments adduced in favour of the contagious origin of cholera morbus.

III,

We shall next record the report of Dr. Albers, a Prussian physician, at the head of a commission sent by the Prussian Government to Moscow, to ascertain the nature of the cholera morbus. This document is dated the 21st of March, 1831.

"On the nature of the distemper, and the question which is so very important to us, in how far the Cholera is contagious, there prevails as yet the greatest diversity of opinions. Under the supposition which we look upon as erroneous, that this question is to be decided on the facts hitherto known, which are connected with the nature of recorded infections, two parties have formed themselves, those of the contagionists and anti-contagionists, the former particularly among the authorities and physicians of St. Petersburg, and the latter among the faculty and inhabitants of Moscow, who almost all of them strenuously maintain that Cholera is not contagious. Both parties cite facts which are met with point blank contradictions by the opposite party, whence the unprejudiced inquirer finds it as yet impossible to form a conclusive judgment. The vastness of the

Empire, the very unsatisfactory manner of the few reports sent in, the uncertainty of depositions, influenced frequently by personal motives, and the almost totally interrupted correspondence by letters, offer so many obstacles to inquiry, that even with the best intention it is often only possible in part to overcome them.

When the Cholera first reached Moscow, *all the Physicians of this city were persuaded of its contagious nature, but the experience gained in the course of the epidemic, has produced an entirely opposite conviction.* They found that it was impossible for any length of time completely to isolate such a city as Moscow, containing 300,000 inhabitants, and having a circumference of nearly seven miles (versts ?), and perceived daily the frequent frustrations of the measures adopted. During the epidemic it is certain that about 40,000 inhabitants quitted Moscow, of whom a large number never performed quarantine ; and notwithstanding this fact, *no case is on record of the Cholera having been transferred from Moscow to other places,* and it is equally certain that in *no situation appointed for quarantine, any case of Cholera has occurred.* That the distemper is not contagious, has been yet more ascertained by the experience gathered in this city. In many houses it happened that one individual attacked by Cholera was attended indiscriminately by all the relatives, and yet did the disease not spread to any of the inmates. It was finally found that not only the nurses continued free of the distemper, but also that they promiscuously attended the sick chamber, and visited their friends without in the least communicating the disease. There are even cases fully authenticated that nurses to quiet timid females labouring under Cholera, have shared their beds during the nights, and that they, notwithstanding, have escaped uninjured in the same manner as physicians in hospitals have, without any bad consequences, made use of the warm water used a moment before by Cholera patients for bathing.

These and numerous other examples, which during the epidemic, (we ought perhaps to call it endemic,) became known to every inhabitant of Moscow, have confirmed the conviction of the non-infectious nature of the disease, a conviction in which their personal safety was so much interested.

It is also highly worthy of observation, that all those who stand up for contagion, *have not witnessed* the Cholera, which is therefore especially objected to their opinion by their opponents. But in the very difference of the conviction of those who have to combat the violence of the distemper, and are likely to be more impressed by the facts, and of the conviction of such persons as can observe only at a distance, and are therefore more unbiassed judges of the results, will perhaps be found materials for the solution of a question so much controverted. The same was the case on occasion of the question relative to the Yellow Fever. It was only after a calm examination of all the results, that it became possible to refute the error of those physicians who had collected their experience during their daily and fearless intercourse with the distemper, and had arrived at the conviction of its non-contagious nature.

In the instance of the Cholera, the question becomes more difficult of decision ; because if the Cholera be at all contagious, of which I myself am not doubtful, in spite of all that is maintained here, such contagion differs from the nature of all known contagions, and seems to approach nearest to that of the *Typhus.* With whatever obstinacy the correctness of the facts is disputed by the anti-contagionists, it still appears highly probable, that the Cholera may be communicated by persons proceeding from one place to another, and may lay the foundation of a fresh epidemic, if circumstances favour the communication.

It is greatly to be lamented, that neither of the contending parties is able to produce such authentic documents, and to set on foot such investigations on the spot, as would silence every contradiction ; for as the state of the question now is, we must be satisfied with probabilities.

Only one point seems to be completely made out by by testimonies innumer-

able ; namely, that the Cholera is not communicated by articles of merchandize, or by any inanimate objects. This principle, as I have already had the honour of reporting sometime ago, has been adopted by the public authorities of St. Petersburg, and been acted upon now for nearly three months, without any sinister consequence having ensued. The only quarantine establishment still kept up is between Moscow and St. Petersburg ; every traveller, after staying there for a fortnight, may proceed without further detention ; all mercantile commodities and effects pass without being stopped.

On our journey hither, we met many thousands of sledges loaded with goods, going from Moscow to St. Petersburg. As the rates paid for carriage are extremely reasonable, any stoppage in their conveyance would prejudice the merchant ; hence the carriers, as I myself saw, proceed no further than the barriers of the quarantine establishment, and remain there, as far as their persons are concerned, and their sledges alone pass through, which, being met on the other side by their partners or servants, are taken on without hindrance. The result of my own daily experience, therefore, perfectly agrees with the above stated principle ; namely, notwithstanding all my inquiries, *I have met with no instance which could render it at all probable, that the Cholera is disseminated by inanimate objects.*"*

In the above document it will be seen that all the *facts* which Dr. Albers brings forward, are against contagion ; while, nevertheless, he doubts not the contagious character of the malady, thus laying himself open to the opprobrium which he himself has recorded, namely, "that all those who stand up for contagion, *have not witnessed the cholera.*"

But how does Dr. Albers make it out that cholera assimilates nearest to *typhus*, when he tells us that articles of cloathing and other inanimate objects are incapable of harbouring or transmitting the contagion ? Is he not aware that the fomites of *typhus* are very readily harboured in cloathing ? It is, indeed, abundantly evident that Dr. Albers stated his *facts* faithfully ; but fashioned his *creed* according to the instructions of his masters ! God grant that both *facts and opinions* may not be moulded according to certain pre-ordained forms, even in this country !

IV.

We entreat the attention of our readers to the following document, entitled—

" REPORT ON THE CHOLERA MORBUS, DISCUSSED AND AGREED TO IN THE EXTRA-ORDINARY COMMITTEE ESTABLISHED AT MOSCOW BY ORDER OF HIS MAJESTY, THE EMPEROR.

An Extraordinary Committee, composed of the most eminent public officers, has been established at Moscow, by order of His Imperial Majesty, for the purpose of discussing the expediency of a general purification of all merchandize in Moscow after the cessation of the Cholera Morbus in that capital. The Committee in consequence proposed the following question to the Members of the Provisional Medical Council :—Can goods or merchandize communicate the Cholera Morbus ? and in case of an answer in the affirmative, What is the degree of the intensity of the contagious principle ? The result of the examination of the opinions of the twenty-four Members of the Council is, that three of them admit,

* Parliamentary Papers.

it is true, the possibility of contagion by means of goods and merchandize, but under certain conditions ; eighteen entirely reject it. One member admits it : but, from the experiments which he has made, he does not think fumigation necessary. Another member recommends the adoption of this measure, but only for the purpose of tranquillizing men's minds. Finally, another declares that he knows no fact which proves the communication of the Cholera Morbus through the medium of material objects. He thinks, however, that it will be useful to apply fumigation to some kinds of merchandize, such as cloth, by employing chlorate of lime, and merely to expose all other goods to the air. The Committee having given to the examination of this subject all the attention which the importance of the question demanded, and which the orders with which they were honoured by his Imperial Majesty enjoined them, have unanimously come to the following conclusions :—

1st. The quarantine regulations relative to the purification of goods and merchandize have been established from observations made on the Plague ; they have therefore been adopted, under the present circumstances, entirely by conjecture. Nevertheless, it was impossible to avoid adopting these regulations as long as the contagious influence of the Cholera Morbus, and the means by which it spreads itself, were not yet determined by accurate observations. It is necessary, then, to replace these ancient regulations by others more appropriate to the new disease, and equally founded upon evident facts.

2d. It has not hitherto been possible to collect in any place in the empire so many accurate observations on the Cholera Morbus, nor to unite on one spot so many able physicians as at Moscow, where, during the three last months, more than 7,500 sick were treated by the care of the Provisional Medical Council, and 52 bodies dissected. It is only then in this capital that the examination of all the opinions pronounced on the Cholera Morbus, opinions hitherto conjectural, contradictory, and founded on a small number of equivocal or ill observed facts, can be proceeded in with the best chance of success.

3d.—Although the members of the Provisional Medical Council have not pronounced an unanimous opinion relative to the communication of the Cholera Morbus by means of goods and merchandize, nevertheless *the majority at least, pronounced against this hypothesis, and the opinions of the minority destroy themselves.* They offer many contradictions, and do not correspond with known facts. For example, a Member advances ‘that the virus of the disease (*virus morbifique*)* ‘of the Cholera Morbus is not so subtle as that of the Plague ;’ he then adds, ‘that is proved by a great number of examples, that persons in health have been ‘attacked by the epidemic, from having made use of beds or clothes which had ‘belonged to victims of the Cholera.’ In fine he maintains, ‘that it is more ‘by analogy than from positive experiments, that it may be affirmed that goods ‘which communicate the Plague would equally communicate the Cholera Morbus.’ If this member merely founded his opinion on the analogy which he believes to exist between the Plague and the Cholera, it would follow, that he ought not to have mentioned the number of examples which he might have observed, even on the supposition that a physician who only treated 300 cases of Cholera, may have been able to collect an infinite number of observations. In fine his assertion on the analogy between the Cholera and the Plague, is in contradiction with the difference which he himself says ought to exist between the contagious principles of these two diseases. The second member who declares the Cholera Morbus contagious, expresses himself in these terms : ‘This epi-

* This is improperly translated. A “morbific virus,” and the “virus of a disease,” are quite different things. Thus, a morbific virus may be malaria ; but the virus of a disease, is an emanation from the body of a patient labouring under the effects of malaria.—ED.

'mic disease cannot arise either from a change of temperature or from the nature of the food, or from confined habitations, or from bad clothing ;' while he subsequently refutes himself, by saying, 'aged people or those who lead an irregular life, those who are subject to catch cold, or to stomach complaints, or in fine, who are not regular in their diet, are more exposed than others to the action of the Cholera Morbus.' The third member of the minority gives the following example in support of his conviction of the possibility of the communication of the Cholera Morbus by goods and merchandize : 'An individual who was suffering of a quinsy was attacked by cramp in his legs, from having bathed his feet in a vessel which had been used to empty the bath of a *Cholériste*.' Still if in truth the Cholera Morbus spreads itself in this manner, it is not probable that such a case should be observed but once during the treatment of more than 7,500 sick. It must then be concluded that the cramp was brought on by some other cause which has escaped the investigation of the physician.

4th.—On the contrary the opinion of those who do not admit the possibility of contagion, by means of material objects, has for its support both the majority of voices and the scrupulous observance of facts. The members of the Medical Council have been convinced by their own experience, as also by the reports of the physicians of the hospitals, that, after being in frequent and even habitual communication with the sick, their own clothes have never communicated the disease to any one, even without employing means of purification. Convalescents have continued to wear clothes which they wore during the disease, even furs, without having them purified, and they have never had a relapse. *At the opening of bodies of persons who had died of the Cholera, to the minute inspection of which four or five hours a day for nearly a month were devoted, neither those who attended at these operations, nor any of the assisting physicians, nor any of the attendants, caught the infection, although, with the exception of the first day, scarcely any precautions were used.* But what appears still more conclusive, a physician who had received several wounds in separating the flesh, continued his operations, having only touched the injured parts with caustic. A drunken invalid having also wounded himself, had an abscess, which doubtless showed the pernicious action of the dead-flesh, but the Cholera Morbus did not attack him. In fine, foreign Savans, such as Moreau de Jonnes and Gravier, who have recognized, in various relations the contagious nature of the Cholera Morbus, do not admit its propagation by means of goods and merchandize.

5th.—A member of the Committee justly observes that the trade of Moscow, after having languished at the time the Cholera Morbus reigned there with all its force, recovered its activity in November, when the epidemic was becoming weak, and that since the first cold, there has been a considerable circulation of merchandize, as well of that manufactured at Moscow as imported into it. Moreover, if the germs of the contagion had been concealed, their action would have shown itself either in individual cases, or in the return of the ravages of the epidemic through the town, and in the increase of the number of victims. This not having taken place, it is conclusive that the disease does not spread itself through the medium of material objects.

6th.—On the contrary supposition, the result would be, that since 1,500 of the 7,500 above-mentioned sick were taken care of at home, and in consequence exempt from the active superintendence of the medical police, the articles (effects) with which their houses were furnished, and with which the sick were in constant contact, would rather tend to spread the contagion than merchandize deposited in magazines which had not been touched by any one. It would become then much more necessary to purify effects shut up in every house in Moscow, than the merchandize. The almost total cessation of the epidemic evidently shows that no general contagion has taken place by means of the above-mentioned effects, the purification of which would be besides very difficult and even impracticable. Even after the Plague, all the houses at Moscow were not purified, but

only those in which sick were known to have been, or of which the inhabitants were dead.

7th.—Even supposing that, which however is only conjecture, the Cholera Morbus was effectually propagated by merchandize brought from the fair of Nizni Novgorod, it would result as this merchandize has been spread not only in Moscow but as far as St. Petersburg and a number of other towns, and in great part distributed to the consumer, either that the contagion did not exist in the merchandize at Moscow more than at St. Petersburg, or that it is necessary to purify St. Petersburg, and the other towns which have received the merchandize from the fair of Nizni Novgorod, in the same manner as the city of Moscow would be purified.

8th.—But even if, without attending either to the evidence of the proofs which establish the impossibility of contagion by merchandize, or to the want of accurate observations, which might serve to establish the contrary, it should be decided through excess of precaution to purify all the merchandize in Moscow, this measure would not be the less followed by consequences which demand all the attention of Government. The alteration of the colours and of the lustre of the merchandize would produce a sensible diminution in their value, and the loss of considerable capitals; trade would for a long time stand still, many establishments of industry would be ruined, and thousands whose livelihood depends upon the manufactories would be reduced to a frightful state of misery.

9th.—From these considerations the Committee have concluded, in conformity with the order of His Majesty the Emperor, of the 25th of August last, that it is not necessary to subject the merchandize to fumigation in those places where the Cholera Morbus has existed.” 14.

The above document will speak for itself, and we apprehend that it will form a tolerable set-off against the contagionists who have no experience of the epidemic themselves.

V.

We shall now proceed to take notice of two communications to Government from Dr. Walker. The first letter, dated Moscow, 15th March, needs little notice, as it is chiefly occupied with marches and counter-marches in pursuit of cholera—with but indifferent success. At length, however, the Doctor came up with the expiring enemy at Moscow, and had an opportunity of seeing a few cases of the disease there—but he was very doubtful whether they were *all* (14 in number) really cases of cholera. Dr. Walker affirms that the symptoms of the disease, and the appearances on dissection, “are exactly the same as those described in the official reports from the medical boards of the three Presidencies of India, &c.” But as Dr. Walker did not see the cholera of India, he cannot be considered as a perfect judge. How can a man be certain of the identity of two diseases, when he has only seen one of them? We positively assert, and we shall illustrate this in the sequel, that the graphic description of Indian cholera is inadequate to convey an exact idea of the disease. The eye must be added to the ear, to enable a man to form a clear conception of the malady. Be this as it may, Dr. Walker seems rather puzzled in making up his opinion on the subject of contagion—and explains himself so badly, that he is obliged to add a postscript to enable the reader to comprehend his creed. The following portion of Dr. W.’s second letter, dated St. Petersburg, 29th April, 1831, contains all the information which it is necessary to lay before our readers.

“ I hasten to communicate the results of my own observations, and of the in-

formation which I have been able to collect from others respecting that most important point, the contagious or non-contagious nature of the disease.

In Moscow by far the greater part of the medical men are of opinion that the disease is not contagious, but produced by some peculiar state of the atmosphere, not cognizable by either our senses or by instruments; *that this was proved by almost every person in the city feeling during the time some inconvenience or other, which wanted only the exciting cause of catching cold, or of some irregularity in diet, to bring on Cholera; that very few of those immediately about the patients were taken ill. That persons had put on the clothes of patients who were very ill or had died of Cholera, had lain in their beds, or even alongside of corpses, had bathed in the same water where very bad Cholera patients had been bathed just before, and that none of these persons were taken ill.* That a strict investigation had been made into what were reckoned the First Four cases occurring in Moscow, and that it was proved that they had neither themselves been in any infected place, nor had communication with any one coming from such a place.* I confess, however, I am not quite satisfied with this, because,—1st. In a place of such an extent as Moscow, every one can conceive it perfectly possible that there may have been cases before these without its being known, and I have the CERTAINTY myself of its being possible, for it occurred to me while I was there, to know of Four cases that had never been reported to the police, nor seen by a medical man.†

2d. One of the Four cases had only a few days arrived from Simbirsk, so that he might have brought the seeds of the disease with him, because the disease was in the district of Simbirsk in the end of August, and he died in Moscow, I think on the 16th of September.

3d. This investigation was not made by medical men, but through the police, which I do not reckon the proper method, as the people are so afraid of them, that it is next to impossible to get at the truth.”

“ With respect to the possibility of the disease being communicated by clothes or goods, no cases have as yet come to my knowledge sufficient to prove it. I have heard of several instances brought forward in support of the opinion, but they are not fair ones; as in all of them the persons had either come from places where the disease was, or it was already prevalent in the place where they were living. And by far the most general opinion, even among the contagionists, is, that it is only through the medium of the body that it is propagated.

So that the result of what information I have been able as yet to collect on the subject, is, that I believe it is capable of being conveyed from one place to another by men, *although it cannot be considered completely proven;* while, although there is not evidence sufficient to prove its communication by clothes or goods, still we cannot say that it is impossible. *See Postscript.*”

“ Although it does not admit of legal proof, yet there is no doubt that, from the great difficulty, or indeed impossibility, of keeping quarantine strictly in such a great extent of country as that where the disease prevailed last summer and autumn, numbers of persons and quantities of goods from infected places, evaded the quarantines, and came even to this city, but fortunately without bringing the disease.”

“ Although such is my opinion, yet I should not conceive it necessary to have any Quarantine for vessels arriving in England from Russia, unless the disease

* Compare this with the positive assertion of Sir William Crichton to the contrary!

† Thus we see the contagionists always substituting suppositions for facts. The first four cases that were visible and tangible, were free from suspicion of contamination; but then Dr. Walker *supposes* that other cases *might have happened* prior to the four, and thus the whole business *might have resolved itself into contagion, instead of atmospheric influence!!!*

prevailed at the place of loading or in the neighbourhood, and even then perhaps only in the event of any person on board having had the disease during the passage. For although there are not as yet any observations regarding the length of time that the disease may lie dormant in the system, the general opinion is, that it does not probably exceed fourteen days, and therefore there would be little or no risk in admitting a vessel that had been at least fourteen days on her passage, without having any sick on board. Persons however might get in a considerably shorter time from here to England, by the steam-boat to Lubeck, if there should not be any quarantine there."

" *Postscript.*—I find the expressions I have made use of here, have appeared to others not to convey quite the meaning I myself attach to them. I intended to say that I myself am *convinced* of the contagious nature of the disease, but that the *proofs* of its transmission from one individual to another are not *quite perfect* as yet. And believing so, I cannot of course be without some apprehension that it may also be conveyed by clothes and other articles, which have been in more immediate contact with the sick, although the proofs of this are, as yet, still more defective. It is a disease *sui generis*, and must have its own laws as well as the plague, typhus fever, and other contagious or infectious disorders, but these laws we do not yet sufficiently know. Its attacks seem to be favoured by depressing passions, especially fear of the disease, great fatigue, low bad living, bad air in crowded dirty dwellings, drunkenness. I have been informed that in Austrian Gallicia, where it had made its appearance, a better diet furnished to the lower orders at the expense of the government, seems to have contributed as much as any other measure to prevent the spreading of the disease.

THOS. WALKER."

VI.

We are now arrived at the point where defensive measures were taken up by our own Government; and Sir William Pym naturally leads the van on this important occasion.

" LETTER from Sir *W. Pym* to the Clerk of the Council, suggesting immediate measures against the introduction of the Cholera.

SIR,

London, 7th June, 1831.

In consequence of the intelligence received this day, relative to the spread of Cholera in Russia and Poland, but more particularly on account of its having reached the port of Riga, I have thought it my duty to state to you, for the information of the Lords of His Majesty's Council, my opinion as to the necessity of immediately having recourse to more decided measures against the introduction of the disease into the United Kingdom. With this view I beg, 1st, to propose, that the quarantine be imposed upon all vessels coming from the Baltic, the Hanseatic towns, and the ports of Mecklenburg: 2d, That pilots and officers of Customs be strictly ordered by the proper authorities to carry all vessels liable to quarantine, having clean bills of health, to the regularly appointed quarantine stations: 3d. That all vessels having foul bills of health, or arriving without bills of health, from ports where Cholera prevails, be ordered by pilots and officers of Customs to proceed to Cromarty Bay, to Stangate Creek, or to Milford Haven: 4th, That experienced persons be appointed to superintend the vessels under quarantine at Grimsby, at the quarantine anchorage in the Firth of Forth, and in the Firth of Tay, near Dundee, and at Cromarty Bay, if this last should be thought necessary; and that medical attendants should be appointed at those stations for the purpose of inspecting the crews and passengers, and reporting upon their state of health previously to their being admitted to pratique: 5th, *That an order be issued, prohibiting altogether the importation of every description of woollen rags; and as it was considered that certain articles, hemp, flax, wool, &c. &c. generally termed susceptible, (with respect to their liability to retain the*

contagion of plague, and of other contagious and infectious diseases,) might, in consequence of the arrangements made respecting them by order of the Russian Government, for the purpose of dividing them into different qualities, be imported from the ports of Russia with perfect safety, so long as the population at those ports continued free from disease, it now becomes a question, and a very important one to be decided, whether goods so deemed susceptible can be imported with safety (without quarantine purifications) from ports where Cholera prevails; taking into consideration the importance of the subject, and the very great responsibility attached to me individually, in my official situation, I beg to submit, whether it would not be most desirable, as well as a great satisfaction to the Public, that the Lords of the Council should call upon Sir Henry Halford and the College of Physicians for their opinion and report upon this most important point.

Should their opinion be in favour of the purification of goods of any kind, it would be desirable, in addition to the regulations before proposed, that all Vessels from the Baltic, having goods on board requiring purification, should be ordered to proceed either to Inverkeithing Bay in the Firth of Forth, to Stangate Creek, Milford Haven, Liverpool, or Holy Loch in the Clyde, those being the only ports where there is any Lazaret accommodation. I have the honour to be, &c.

(signed) *W. Pym,*
Superintend. Gen. of Quarantine." 15.

The above letter of Sir William Pym, together with all the other documents which we have noticed, being submitted to the president and fellows of the College of Physicians, the following answer was returned, in which it will be seen that the College demurred to the 5th proposal of Sir William Pym, respecting the prohibition of rags, and the purification of other articles of merchandize.

"**OPINION of Sir H. Halford, Bart. and other Physicians, on the Nature and Symptoms of the Cholera.**

Having no other means of judging of the nature and symptoms of the Cholera than those furnished by the documents submitted to us, we, the undersigned Physicians, have come to the conclusion, after most careful consideration, that the disease is of an infectious nature, and therefore does require that all persons coming from an infected quarter should be placed under a Quarantine of at least Fourteen days.

With respect to merchandize, as we do not find any proof in these papers that the disease has been propagated by means of inanimate objects,* and as the Russian Government was induced by the strong representations of the Extraordinary Committee appointed 'to determine upon the propriety of a general purification of all the merchandize in Moscow, after the extinction of the Cholera in that city,' to give up the plan of fumigating such articles of commerce, we cannot bring ourselves to believe it necessary to adopt the 5th Article of Sir William Pym's recommendations, but in the propriety of his Four first proposals we entirely acquiesce.

(signed) *HENRY HALFORD, { President of the Royal College of Physicians.*
THOMAS TURNER,
WILLIAM MACMICHAEL,
FRANCIS HAWKINS.

June 9th, 1831.

P. S.—The date of the Fourteen days, we presume, is to be reckoned from the time of leaving the infected place, and on condition of no person being sick of this malady during the voyage.

(signed) *HENRY HALFORD." 16.*

* "See Dr. Alber's Report."

Now we perfectly concur in the demurrer of the College respecting Sir William Pym's 5th proposition, because they acted on the evidence of facts submitted to their inspection; but how are we to account for the sudden change in the councils of the College, when, a few days afterwards, we find the demurrer abandoned, and a recommendation to prohibit and fumigate merchandize, according to Sir William's fifth proposition?

"College of Physicians, June 15th, 1831.

TO THE LORDS OF HIS MAJESTY'S MOST HONOURABLE PRIVY COUNCIL.

WE, the President and Fellows of the Royal College of Physicians in London; having carefully considered all the Papers which have been transmitted to us by order of Your Lordships, have agreed upon the following Report:

That the Evidence submitted to us, in the Documents sent to the College by the Lords of His Majesty's most Honourable Privy Council, warrants an opinion that the disease called Cholera in Russia is communicable from one person to another.

Although these documents contain some statements which lead us to doubt whether this infection is conveyed by merchandize or not, yet until we have further information, *we recommend that articles of merchandize admitted into this Country, from infected places, should be submitted to the usual regulations of Quarantine.*

In the name of the College,

(signed) *Henry Halford, President.*

(signed) *Francis Hawkins, Registrar.*" 17.

We puzzled our brains, in vain, to account for this revolution of opinion in the course of six short days, during which no new information was received. Did the great captain of quarantine throw his yellow standard into the scale, in imitation of a famous captain of antiquity, who threw his sword there, and thus make it kick the balance in favour of contagion?

The short report of the College above inserted being unsatisfactory to the Government, a more detailed statement of the *reasons* for the conclusions of the College was demanded: accordingly a long letter was forwarded to Government, embodying chiefly the account given by Sir William Crichton, on which we have already commented.

It is not a little remarkable that, in all these accounts, there is no allusion made to the epidemic cholera of 1829, which ravaged the city and government of Orenburg. How can we depend on Sir William Crichton's information, when he tells us that it was in the Spring of 1830 that the first accounts of the cholera morbus reached the medical council of St. Petersburg!! Professor Liechtenstadt has, as our readers will perceive, published a detailed account of "the cholera, as it appeared in Russia in the years 1829 and 30." These striking defects, and the unequivocal bias, or rather inveterate prejudice, with which Sir William writes, take away all confidence in his *opinions*.

VII.

Since the above was written—now many months—we have listened to the reports, and perused the statements made through various channels, respecting the cholera morbus—all of which have only tended to strengthen our conviction that the disease is non-contagious, except under circumstances

of *filth and foul air*; and that all our quarantine regulations (more especially internal quarantine) are worse than useless. We see that almost the whole of the Continent has thrown off this *INCUBUS*, convinced of its inefficacy as to prevention, and of its detriment, by stagnating commerce and keeping the minds of men in perpetual dread of contagion. How did cholera originate in Hamburg? Was it carried thither by caravans, diligences, or steamers? No, indeed! It broke out "in a miserable resort called the DEEP CELLAR, frequented by beggars, vagrants, and other abandoned subjects, of both sexes, and to this profligate class of people it has hitherto been chiefly confined." We find that, in ten days after the breaking out of this dreaded scourge, the people of Hamburg talked and cared ten times less about it than before its advent, and while they were hemmed in by cordons and quarantines! Waiting, then, with equanimity the approach of cholera from the banks of the Wear to the shores of the Thames, we shall dedicate a portion of this article to select notices of some of the many works on that disease which have issued from the press, even since the publication of our last number, and with the weight of which our table actually groans. Many, indeed most, of these publications will require but little notice here, being re-publications of old materials, got up for the gratification of that public excitement which naturally prevails when a terrible calamity impends over our heads. In a disease, too, where the cause, the nature and the treatment are quite undecided, there is ample scope for hot-headed individuals to rush into the field, each pregnant with the important conclusions to which he has come—very often without any other *data* than the conceptions of his own brain!

[Mr. KENNEDY.]

I. We shall take these publications without respect to order, priority, or rank, and commence with that of Mr. Kennedy.* This gentleman's volume is chiefly a compilation from the Indian reports, mixed with a certain portion of the compiler's own opinions and reasonings. We wish we could give unqualified praise to both or either of these portions. The abstracts from the Indian reports on cholera are conducted on a very dangerous plan. There are no, or very few, inverted commas—and although he avers that he uses the words of the authors, yet he also informs us that he has abridged them *more than two-thirds*—that he has occasionally departed from the text—but not to "interfere with the sense of the passage." Mr. K. tells us that he is indebted to the Court of Directors, for the opportunity of consulting the documents compiled in India by their command.

"In making abstracts from *a part* of these valuable reports, my object was of a general character, namely, to introduce short descriptions of cholera, and a variety of opinions from various authors—under the impression that a more comprehensive knowledge would be conveyed in this way of the peculiarities of the disease, than could possibly be afforded in the uniformity which usually pervades the description of an individual."—*Preface*, ii.

Considering that Mr. Kennedy jumped at once to the conclusion that

* The History of the Contagious Cholera; with Facts explanatory of its Laws, &c. Octavo, pp. 291. October, 1831.

cholera was a contagious disease, and placed it so even in the *title page*, notwithstanding that the question is still *sub judice*, our attention was arrested by the word “*part*” of the Indian Reports; and, on turning to the list of reports analyzed or condensed by Mr. Kennedy, we found them to amount to 37 in number. Of these 37, selected by our author from such an immense mass and multitude of reports and reporters, 22 authors are given who are neutral, either stating no opinion at all, respecting contagion, or being undecided—13 contagionists are brought on the tapis—*two anti-contagionists*!! Now, in the preface to the work, Mr. Kennedy lauds Mr. Scott, the reporter of the Madras Medical Board, as “claiming peculiar respect,” and as having “executed a very difficult task with judgment and impartiality.” Let us hear what Mr. Scott, as the organ of the Madras Board, says on this point. Our readers may turn to volume III., of this series, page 136, for particulars. Speaking of contagion, Mr. Scott observes:—

“If this question could have been decided simply by the opinions of a majority of medical men, it would have been already set at rest *against the doctrine of contagion or infection*;” “for there are few subjects, perhaps, on which so little diversity of sentiment has existed.”*

Yet Mr. Kennedy has arrayed *two* individuals, among the army of medical officers in the East, as maintaining the doctrine of *non-contagion*!! After this specimen of candour and impartiality on the part of an author who purports the compilation of a work fairly and honestly from materials collected in the field of observation and experience, Mr. K. must excuse us for dismissing his book without further notice. It is not, in our opinion, constructed in a way to advance science or benefit humanity.

[Dr. A. NEALE.]

II. We next come to the work of Dr. Adam Neale.† This is really a very curious, learned, and, considering the *grave* subject on which it treats, a very *amusing* production. We mean to give some account of it in a separate article, and therefore shall only notice, in this place, that portion of it which bears on the all-engrossing object of enquiry—CHOLERA MORBUS.

From letters which we have recently received from several parts of the Continent, we find that the doctrine of “intro-animate pathology,”—or in other words, the doctrine of epidemic diseases being the result of animalcula or insects floating in the air, is becoming very prevalent there. In

* Why did Mr. Kennedy select his abstracted reports from the first two or three years of the epidemic in India, when mens' minds were distracted by the wide range and fatality of the disease? Why does he not advert to the opinion of Mr. Scott, whom he lauds for impartiality and judgment, whose report was drawn up *three years* later than the latest of Mr. Kennedy's reports? How could Mr. K. have had access to the documents at the India-house, and yet neglect the valuable reports in Mr. Scott's work? Even this Journal (vol. III.) would have furnished him with an analysis of Mr. Scott's work, if he could not procure the original.

† Researches to Establish the Truth of the Linnæan Doctrine of Animate Contagions, &c. &c. &c. 8vo. pp. 258. October, 1831.

the absence of a better theory, we should not be surprised to find the said doctrine extending to this country — perhaps even before the epidemic reaches these shores.

It is necessary to premise, as indeed the title of the work indicates, that the theory here propounded, originated, or at least was first brought into notice by the immortal LINNÆUS in a thesis of one of his disciples (Nysander) in the year 1575. Of this thesis Dr. Neale has given us some account. The following extract will convey some idea of this animalcular doctrine.

"Contagious diseases then, for the most part, all coincide in this peculiarity, that they are attended with exanthematous eruptions, either externally or internally, insomuch that even hydrophobia is said to produce certain pustules underneath the tongue; so that in all contagious maladies there exists a certain exanthematous matter, the eruption of which usually mitigates the febrile symptoms;* that the presence of this matter excites bodily uneasiness, if not feverish actions, and that, even in its mildest form, the disease is exacerbated at some certain hour of the day, or towards evening. That the power of the disease is increased by sweet articles, but diminished by bitters, and that the irritation is excited by fat articles of diet. That it is somewhat repelled by cold, but like every thing animate, is cherished by warmth, although it appears to be expelled by great heat: thus, from the application of heat, the itch and every exanthema is augmented, and from increase of heat and fever driven outwards to the warm surface of the body. That they are destroyed by *Anthelmintic* remedies, and therefore *Sulphureous* remedies cure the itch: and thus *Mercurial* medicines, (as they are destructive to nearly all insects), cure both the itch and syphilis, and prove preservative both from the plague and small-pox. And that as tobacco kills all minute insects, fumigation with it prevents contagion. That both analogy and the sense of itching in the pustules of contagious diseases, seem to warrant the same inference. That both in itch and dysentery, the existence of minute insects has been the subject of ocular demonstration. That Langius had observed them in measles; and Kircher in the plague; Hauptmann in syphilis (animalcules resembling slugs); Zeigler in poæchiae; Lusitanus and Porcellus in small-pox, and that the last mentioned had observed also worms in cases of serpigo and other cutaneous diseases.

Both from analogy therefore, as well as from all the experience hitherto acquired, we may very easily believe that very minute insects of that kind, such for instance as *Acaris* of various species, may be the causes of several contagious diseases. Nor is their size or structure at all repugnant to such an idea—since there are animalcules so minute that the human eye unassisted by the microscope cannot even perceive them. The lynx-sighted Lewenhoek observed thousands of insects (or animalcules more properly speaking) which added together scarcely equalled in size the hundredth part of a grain of sand, and even in those fluids which to the naked eye seem altogether pure and diaphonous. While the accurate and ingenious Reaumur has stated it to be his opinion, that that obscure vapour which somewhat darkens the atmosphere in Summer, is nothing else than myriads of insects, so minute, as entirely to elude human vision. And the same naturalist has demonstrated, that these do not exist separately only, but also congregated in societies similar to those of bees and ants, and that these also observe amongst each a certain regular order.

From any evidence of our senses, therefore, we must draw no argument, as to the impossibility of the thing; for the divine PROVIDENCE of the all-wise creator of the universe is equally manifested in the most minute, as well as in the greatest, of his arrangements. Whilst we inspect a living acarus, we feel assured

* "Vide Hoffmann, *Systema*, iv. 122-3.

that, minute as it is, it is provided with muscles, nerves, veins, arteries, and viscera : and that all these, however small, are yet adapted to contain the most subtle fluids, calculated to circulate through them ; all this too we are perfectly warranted in believing. Whence these animalcules shall have proceeded we may well wonder, but we are scarcely warranted in that wondering, if at the same time we but think that these being of such very minute proportions, that they hardly exceed in size the atoms of the atmosphere, can yet fly through the air and seek out the most minute chinks, exactly in the same way as mucor arises constantly from its seeds, sowing themselves wherever any putrid matter shall exist in a state fitted for their reception." 7.

Having very ingeniously applied this animalcular doctrine to various diseases, as scabies, dysentery, hooping-cough, small-pox, measles, plague, and syphilis, of which we shall take due notice in the promised analysis, we must here take a long leap, and come to cholera. Previously, however, to this, we shall probably be pardoned for introducing some consolatory considerations that may, in some degree, reconcile us to the sweeping pestilence that is approaching our shores. It appears that early in the 14th century a plague ravaged Europe, taking its origin in Asia, and destroying *only two-thirds of the human race!* It commenced in Cathay (upper Asia) in 1346, "from a most filthy smelling vapour, supposed to proceed from a certain fiery body which either fell down from the atmosphere, or was eructated from the earth." This vapour consumed all that stood in its way — animals, houses, trees, &c. for the space of fifteen days' journey in every direction.

"*And some most filthy little beasts furnished with feet and tails,* as also worms, and a small sort of snakes in a numberless multitude, fell at the same time from the atmosphere upon the earth, the stench and putrefaction from which, infected the very air, and all the regions circumjacent. A pestilence having arisen from thence, spread around, depopulating the whole of Asia, and afterwards Egypt, Greece, and Italy. Thence it passed into France, Spain, and England ; and at length into Germany. In the city of Florence alone, Villanius says there perished 60,000, but St. Anthony says 100,000. Many prodigies are said to have preceded this plague in Asia, such as horrible openings and gulfs in the earth, exhaling a poisonous vapour, &c. (*Kircheri Scrutinium, &c. p. 247.*)" 171.

Dr. Neale supposes that these "filthy little beasts" could have been no other than "the rat-tailed larvæ of a species of fly, which inhabits cess-pools, and is known to entomologists by the name of *Eristalis tenax.*" That these larvæ do sometimes appear in most extraordinary multitudes, the Doctor can vouch, from what took place at Edinburgh in 1790, when he was a pupil at the high school there. We shall give this record in the author's own words.

"On a sudden, one day, there broke forth a swarm of these larvæ from some humid vaults that were connected with the necessaries, and the dissecting-rooms of the late Dr. Monro, the second of that name. These countless myriads proceeded, marching like an army down one of the wynds, or long alleys leading into the Cowgate, and having nearly reached the south bridge, turned on a sudden to the left, and proceeded along a rising street to the north, leading towards Hunter's Square, and the Tron church, where their career was terminated by the multitude (with staves and stones,) who came out to gaze upon such an extraordinary spectacle. The march of these larvæ continued, to the best of my recollection, for at least three days, and their numbers must have exceeded many millions ; their line of march extending nearly to a quarter of a mile, from the back of the new college to Hunter's Square. Many persons must be now living who can remember to have witnessed this phenomenon." 172.

We do not wonder that our northern neighbours should have been energetic in the construction of a "New Town," where water-closets, and public sewers might supersede the domestic bucket and cess-pool !

But to return from this digression. The plague of insects occurred in China in the year 1347, while Edward the Third ruled in England, and various epidemic diseases soon prevailed over Europe, ending in a real plague. In London, such was the mortality that 50,000 bodies were interred in one week. The deaths at Norwich were nearly as numerous. Venice lost 100,000 people—Lubeck 90,000—while the deaths in the kingdom of Spain are said to have amounted to the incredible number of twenty millions!! In the following year the pestilence was still raging in the South of Europe, as well as in the North. In Denmark it assumed a novel form, and was called the "SORTE DOD," or black death. The author strongly suspects that this is the disease now or lately raging on the shores of the Baltic, under the name of cholera. In 1358, Florence lost 100,000 citizens, as stated by Boccace in his wonderful description of that calamity. Petrarch asserts that very few escaped the malady.

Dr. Neale next comes to the subject of cholera, now "frightening our isle from its propriety," and threatening devastation to the people. A consideration of the phenomena, Dr. A. thinks, will induce us to conclude that "the efficient cause or contagion of cholera acts, in the first instance, on the brain and nervous system—just as the venom of the cobra de capello and the rattle snake, or any other deadly animal poison :—that it is contained in the atmosphere—enters the human body, most probably through the nostrils, which are always open, and is applied immediately to the brain, by means of the extremities of the olfactory nerves, gliding along these upwards through the cribriform plates of the ethmoid bone." The same might probably be said of the contagion of typhus and many other diseases. The following passage from the Englishman's Magazine is worth quoting.

"The entrance of the epidemic into Orenburg, took place on the 26th August, 1829, and its approach was attended with some extraordinary circumstances, which tend strongly to support the train of reasoning pursued in these researches.—During the summer of 1830, the Tartars who frequent Moscow for purposes of traffic, predicted the approach of a pestiferous malady, which, however, the inhabitants, relying upon the local advantages of their city, would not credit. Suddenly, however, the atmosphere was filled with dense masses of small green flies, which in Asia are the forerunners of pestilence, and are called plague-flies. The streets swarmed with these insects ; and as soon as the inhabitants quitted their houses they were covered from head to foot. For a time, however, no attention was paid to this phenomenon, nor were any preventive measures against the cholera even thought of until intelligence arrived that this formidable disease had appeared in Nischid-Nowgorod." 194.

The author can find no similar instance of such swarms of green flies filling the air, excepting in Plouquet's *Bibliotheca Medica*, under the article Pestis, where they are said to have appeared in Germany previous to that plague which raged at Nimeguen, during the time of Dimerbroeck. The author enters at great length into the investigation of animalcular contagion ; but we are unable to follow him. Epidemic diseases are more speedily diffused and propagated during certain winds. In Europe, Asia, and Africa, it is during the sultry sirocco from the South-East. "In Eng-

land, such a wind, in Spring, is generally attended by swarms of *aphides*, and is called *a blight or blighting wind*, by our farmers."

" Every one who has travelled through the south of Poland and Gallitzia, must have remarked, as I did in 1805, that the peasants there are carried on a bier to their graves, which are very shallow, wherein they are commonly interred without coffins. In cases of pestilence therefore, pestiferous flies and insects can easily find access to the bodies of the dead ; as they also can in Asiatic and Mahometan countries, and whoever has been obliged to pass a few nights in the houses of the Polish and Russian Jews, (the inn-keepers generally in these parts of Europe,) must have *felt cruelly*, how much they abound in all kinds of flies, bugs and vermin. In such countries, therefore, an epidemic disease is speedily disseminated, and soon believed to be infectious ; whereas in Hindostan and Eastern Asia, the natives being more cleanly in their persons, and bound by their religious ordinances, (Hindoos as well as Mahometans), to practise frequent ablutions ; clothing themselves also in white calicoes and muslins, (not in greasy woollens and decaying animal furs), pestiferous insects are more speedily destroyed, and cannot so easily nidify in their dwellings or about their persons. Hence, epidemic diseases, which in India are scarcely contagious, rapidly assume that character in Europe. Wine too being prohibited, and spirits little used, the Asiatics are more temperate in their habits of life, and gluttony and drunkenness, common vices in Europe, predispose the bodies of the poor labouring classes to receive such a disease as spasmodic cholera, from the over-saturating their blood with carbon and hydrogen, which are ever predisposing circumstances during the times of pestilence ; wherefore it has been remarked by the physicians of Russia and Poland, that the present malady chiefly attacks men rather than women or children, the poor and filthy, in preference to the affluent and cleanly ; and sots and drunkards especially beyond all others. What an additional motive and encouragement is this, for being cleanly and temperate ?—exemption from the attacks of pestilence and the increased probabilities therefore of a protracted and healthy enjoyment of life." 200.

The following passage will afford an entertaining proof of the extravagance to which a theory may be carried by an ardent mind. It is an account of an attack of cholera sustained by the author himself in the month of July, 1823.

" I was then travelling through Italy, on my route to Malta, and after two days of painful journeying from Rome through the Pontine marshes, had slept at *Terracina*, and next day reached *Mola di Gaeta* ; and while visiting the ruins of Cicero's villa there, was exposed to the disastrous influence of *a strong South East or sirocco wind*. The day was very sultry, and the journey in the afternoon towards the little village of *St. Agatha*, most oppressive. At *St. Agatha* I was roused from my bed about two o'clock in the morning with all the symptoms of cholera. A most severe storm of thunder and lightning was then passing through the valley. Fortunately for me, I had brought from Paris, an ounce bottle filled with strong laudanum, of which I took at intervals doses of about thirty or forty drops, joined with some *Eau de Cologne*, of which I had also a bottle in my travelling trunk. After four hours most severe suffering from cramp and oppression at the *præcordia*, the attacks of cholera ceased, and I fell into a state of syncope and collapse, in which I remained (as I afterwards learnt), about an hour, sleep followed and I awoke in a copious perspiration, and finding, on enquiry, that no medical assistance could be had nearer than *Capua* or *Naples*, I was assisted out of bed, carried into the carriage by the vetturino and a person of the inn, and, after great suffering, passed through *Capua* and finally reached *Naples*, where I slowly recovered. I consider that this was a slight sporadic attack of the true epidemic cholera for these reasons.—First, that the

disease was then raging at Latakia and Antiocha, on the coast of Syria, on the eastern shores of the Mediterranean, and, upon inspecting the Maps of the course of Cholera, published by Dr. B. Hawkins and Mr. Kennedy, (the latter in the Englishman's Magazine), the reader will perceive on drawing a straight line from these regions to St. Agatha, that they lay directly east and by south of St. Agatha and Terracina. Secondly, the matter vomited was the same glairy fluid resembling rice water, and the spasms about the abdominal muscles, diaphragm and region of the heart, resembled exactly those of the epidemic. I think I owed my recovery, under DIVINE PROVIDENCE, to the circumstance of my having fortunately the laudanum and Eau de Cologne at hand, and to my skin being in a perspirable state, from having been using warm baths at Rome for rheumatism in my knees and ankles. My convalescence was tedious, as I was afterwards attacked at Malta with dysentery, owing to the state of debility in which I had been left by the attack of cholera, and then drinking the tank-water of Valetta, which at all times abounds with the ova of aquatic insects and animalculæ, as has been already stated." 210.

The reader will surely smile at this *far-fetched* (in medical language we might well call it the *remote*) cause of cholera—namely, the animalculæ floating in the air on the Coast of Syria, and wafted by the sirocco to Terracina in Italy, where they produced a "sporadic attack" of "*the true epidemic cholera!*" How far "DIVINE PROVIDENCE" had any thing to do with the stock of laudanum and eau de cologne, laid in for the rheumatism, we will not venture to say. We are inclined to think that Dr. Neale did not witness the liquefaction of the blood of St. Januarius, and various other sacred and unquestionable miracles, in the Eternal City, in vain! Whether the heat and malaria of July, in the Pontine Marshes, together with the fatigue and excitement of wandering round the tomb of Cicero, near Mola de Gaeta, had any hand in the production of the Cholera at St. Agatha, it is not for us to determine. Being endowed with only plain John Bull reason and sense, we should not have travelled so far as the Coast of Syria for animalculæ to excite an attack of cholera, under the above circumstances—especially if Dr. Neale quaffed a bottle of Falernian juice (and he surely would not have been so unclassical as to omit this libation to Horace) on Mount Massicus.

But we must take leave of this amusing and somewhat visionary volume, to which we have already dedicated more space, in this article, than was convenient. On the diffusion of epidemic diseases there is a chapter, in which Dr. Neale informs us that a philosophical friend of his suggested "that the minute insects, commissioned by DIVINE PROVIDENCE for this end, are probably wafted in straight lines through the atmosphere, in a similar manner to that pursued by storks, swallows, quails, and other birds of passage, but more especially by swarms of locusts, which last follow leaders who conduct their migrations." Dr. Neale thinks he has proved the truth of this theory by an occurrence which he witnessed in the month of August last. But we must refer our readers to the volume itself, page 234, for the particulars. We part from Dr. Neale in good humour, though not yet converts to his doctrine.

[MR. BELL.]

III. We next come to one of the best works that ever appeared on the subject of cholera, though not included in the list by the Leviathan of Literature,

the QUARTERLY REVIEWER—for reasons which he himself best knows, and which we can only suspect—we mean the work of Mr. Bell.* The able author of the volume before us served in India from the year 1818 to 1827, with unusual advantages for seeing the disease, under every possible aspect, in all its stages—in every variety of the patient's condition—in the hospitals, the camp, and in private dwellings—among the natives and the Europeans—among the newly-arrived and the seasoned. But even to all these advantages we do not attach so much importance as to the talent, philosophy, and impartiality, which every page of the work discloses. We therefore entreat the particular attention of our readers to the book which we are now reviewing—regretting that we cannot devote a whole article to it—but conjuring all medical practitioners to place it in their libraries.

Mr. Bell questions the propriety of the name given to this terrible malady. The vomiting and purging are merely symptoms, and far from being the most important features of the disease. The term *asphyxia* is much more appropriate. Thus the pulse may be gone, and peculiar secretions voided, before the victim is aware of having more than a slight indisposition. The following case will exemplify the insidious approach of cholera asphyxia.

"While the servant (a Hindoo) of Captain H. was bringing in breakfast, his master was struck with his appearance, and asked him what ailed him? he replied he had nothing to complain of but deafness, which he ascribed to sleeping in the cold night wind. His master, alarmed at his looks, sent him to the hospital tent (the epidemic was prevailing in the camp to which this gentleman belonged): on minute examination the man was found to have had some suspicious stools, his pulse had sunk, his skin was cold: He had Cholera, and became rapidly worse; and though he was put immediately under treatment, and was a man of good habits and strong constitution, he had a hard struggle for his life."

11.

Blood drawn during the progress of the disease is found, in the outset, to be dark-coloured—as the case advances it becomes thick, with a deficiency of serum, coagulating quickly, and showing no buffy-coat. In the last stage of the disease the venous circulation is at an end, and the blood is so grumous that it can scarcely be forced out through a large orifice. The average time in which the disease ran through all its four stages was sixteen hours. Before entering on the ratio symptomatum of cholera, the author presents the picture of a case successfully treated, which he thinks "will greatly aid in the elucidation of the malady."

"A patient is brought into hospital in what has been called the third stage of the disease: his countenance is sunk; he has vomiting and purging; his skin is cold; his nails are blue; his pulse is scarcely perceptible; his breathing is oppressed, and he has spasms in the extremities. He is immediately placed in warm blankets; stimulants, including a dose of calomel, are administered; and a vein is opened in each arm, with the largest orifice. At first the blood flows very sluggishly, perhaps it is only procured by kneading the arms, but by-and-by the stream is more free, and as the blood flows it is improved in its colour; the patient feels the greatest relief, *the pulse rises*, and the colour of the blood testifies that the lungs are restored to their function. Little else is necessary; the patient has a second dose of calomel administered to him, is left

* Treatise on Cholera Asphyxia, or Epidemic Cholera, &c. By George Hamilton Bell, late Residency Surgeon, Tanjore. Octavo, June, 1831.

in a warm bed, and falls asleep. In the course of a few hours a cathartic is prescribed, to remove the colluvies which the restored secretions are pouring into the intestinal canal. It only remains to guard against local congestion and re-action; but in general, in a case treated as above, there is no such interference with recovery. The suspended functions seem to be at once restored: the blood is arterialized; the animal heat returns; the excrementitious secretions take place, and the kidneys recover their functions. And it is particularly worthy of notice, that even persons the most ignorant of the doctrine of diseases, who are at all accustomed to see cases of Cholera, are aware that the passing of urine by the patient, is an unerring test that the disease has been overcome." 23.

Such a case, he observes, must tend to shew that, in cholera asphyxia, the due proportion between the venous and arterial blood is destroyed. In all stages of it, the venous blood preponderates over the arterial. In the course of the author's extensive practice and patient observation, he became convinced that the hypothesis of *inflammation* would not explain the symptoms—neither would that of pure nervous debility—nor depraved secretion; for all *secretion*, in its proper sense, appears to be suspended.

"Here then was a disease in which, although there were great discharges of serous fluid from the alimentary canal, all the natural secretions were at an end, the animal heat had disappeared, the heart and arteries had ceased to act, and the blood in the veins was impeded or stopped; yet the sensorial and respiratory powers were little, if at all impaired." 32.

The following propositions embody the conclusions to which our author has come.

1. "The great ganglionic or sympathetic system of nerves, is possessed of a power wholly unconnected with cerebral influence, which it may retain after the brain and spinal marrow are removed, and which may cease to exist while these retain the full exercise of their functions.

2. To this system belongs the circulation and distribution of the blood; and it consequently has a most important share in regulating secretion, and in carrying on the involuntary functions. And,

3. To the suspension of this power of the system, is to be ascribed the disease which has obtained the name of Cholera Asphyxia." 36.

We wish we had space to follow our author through the various reasonings by which he arrives at these conclusions. They certainly are very ingenious, and highly probable. The reasonings and the cases tend strongly to shew that, "after cholera has put a stop to the circulation of the blood, the sensorial and respiratory powers retain their functions." Mr. Bell sufficiently proves that the fluids thrown out upon the internal surface of the intestinal canal are any thing but secretions. They are *exhalations* rather.

"The fluids evacuated by the stomach and bowels, during Cholera Asphyxia, are found to be portions of the component parts of the blood. In health we never see such fluids discharged from the abdominal viscera;—they are not gastric or duodenal juice,—they are not bile,—they are not excrementitious matter,—nor are they the mucous secretion of the canal. The Cholera discharge consists of the serum and fibrin of the blood. But then evacuations go on, and the bowels are filled, after the heart has ceased to act, when the arteries are empty, and when the capillary vessels are no longer supplied with blood by the usual course. The great veins, however, the liver, and the right side of the heart, are gorged with blood; the abdominal veins having no valves, regurgitation takes place, the capillaries are filled by a retrograde course of the blood, and

are thus enabled to discharge the more attenuated parts of it. And although I believe that, in these circumstances, there is a deficiency of the nervous energy necessary towards *secretion*, still, as the medullary nerves retain their functions, the action by which this fluid is excreted, will retain the character of life, and will differ from the purely mechanical and chemical changes which take place after death." 58.

In respect to the effect produced by cholera on the cuticular discharges, Mr. Bell avers that perspiration almost invariably makes its appearance in the latter stages of the disease. Yet, at this time, it is almost impossible to produce vesication. The fact is, that inflammation cannot be induced on a surface where there is little or no arterial circulation. But we must pass on to—

THE MODE OF PROPAGATION.

The origin and progress of this disease, since 1817, is peculiarly interesting; "and gives a character to its remote cause differing from that of every other disease." It travelled from north to south with surprising regularity, and apparently at about the rate of a degree of latitude per month. Thus it appeared at Ongole on the 14th of August, in north latitude $15^{\circ} 30'$ and longitude 80° east—(Coromandel coast) and at Dharwar (Malabar), $15^{\circ} 25'$ north, and 75° east longitude, on the 13th of the same month, August.

"It appeared in Soonda, in $14^{\circ} 50'$ N. and 74° E., in the beginning of September; at Hurryhur in $14^{\circ} 30'$ N. and 76° E., on the 12th September; and at Nellore, $14^{\circ} 20'$ N. and $80^{\circ} 25'$ E., on the 20th September. It appeared at Madras, $13^{\circ} 5'$ N. and $80^{\circ} 25'$ E., on the 8th October; and at Bangalore, which is 3000 feet above the level of Madras, in lat. $12^{\circ} 57'$ N. and $77^{\circ} 46'$ E., on the 22d of October. And as we approach Cape Comorin, on the extreme south point of India, we find it coming down one coast almost stage for stage with its progress on the other side.

We thus find the disease travelling from north to south, with unaccountable regularity; appearing in the line of 20° of northern latitude in the beginning of 1818, and reaching 8° north latitude on the 1st of January, 1819; holding its course, seemingly uninterrupted by winds, seasons, or climate; appearing at Dharwar on the 13th of August, in the height of the rains, when the thermometer seldom rises above 75° of Fahrenheit in the hottest part of the day; and at Ongole in the same latitude, but distant 5° of longitude, in the dry season, when the thermometer varies from 95° to 105° , within a few hours of the time at which it broke out at Dharwar. In the progress just referred to, far from being assisted by winds, the disease must have frequently travelled in direct opposition to their currents, and seems never to have been retarded or advanced by their direction." 73.

A map is given, shewing the steady and progressive advance of the disease from Ganjam, marked 3d March, 1818, to Palmacotta, 1st of Jan. 1819, during which time it traversed a space of between ten and eleven degrees of latitude with a surprising uniformity of pace—namely, as we said before, at the rate of 60 miles a month. We beg the reader's attention to the following passage, for reasons which will be sufficiently obvious.

"It may be said, that we are not to expect that a disease, which, like cholera, at once arrests the wayfaring traveller, is to pursue its course rapidly on land. But this objection to my argument will not hold on a sea-coast, where small trading vessels carry on uninterrupted traffic, for a great portion of the

year, and where no quarantine laws exist. In such circumstances, a contagious disease would inevitably be speedily propagated along the sea-shores. And hence, instead of Cholera reaching the seaport of Madras, simultaneously with its appearance in parallel latitudes in the interior, some of the many trading vessels must have carried it speedily, from the tainted districts, to the seat of the Presidency, had the disease been capable of being conveyed by man or merchandise. The progress of Cholera down the Peninsula of India, when it visited that country in 1818, is so instructive, that I have thought it advisable to abridge the map published by Mr. Scott in his Report, already referred to. From this sketch it will be perceived, that Cholera, as an epidemic, was in 19° N. on the 10th March, 1818, that it travelled regularly at the rate of about one degree of latitude a month, and that it reached Madras on the 8th October in 13° N. This was its progress during the dry season, and when there was no interference with the constant commercial intercourse which prevails on the Coromandel Coast. On the 10th of October, annually, the port of Madras is closed, and in consequence of the prevailing winds, and of the surf, which, during the next two months, breaks upon the whole of that open coast, every vessel is forced to leave it, and the small trading vessels are drawn high and dry on land. By referring to the annexed map it will be seen, that far from this interruption to communication, retarding the progress of this extraordinary disease, it passed over the next five degrees of latitude, even more rapidly than over the former six; for we find it at Cape Comorin by the 1st of January, and it travelled in little more than a month to Negapatam, nearly three degrees south of Madras, during the height of the rainy season. This mode of progression can scarcely, I think, be explained on the principles of contagion." 81.

Its course through individual districts was, however, extremely eccentric. Often, instead of advancing directly to populous places, when prevailing on the principal road leading to them, it would make a complete circuit round villages, leaving them untouched till another time. After giving numerous instances of this capricious character of its progress, Mr. Bell observes:—

" These examples of the habits of the disease appear to me inconsistent with the notion of its being possessed of a contagious quality. For in a country where, as in India, no restrictive measures are adopted, a principal city in a district could hardly by possibility escape a contagious epidemic, when raging in its neighbourhood. An infectious disease, one attack of which affords no protection against another, which travels in the face of the wind, and prevails in all seasons, would spread in every direction from any point at which it had commenced its ravages; and we should not expect it to disappear until it had attacked every individual liable to suffer from it, and exposed to its pestilential influence.

The course pursued by the Cholera on its appearance in Russia, does not appear to have differed very much from its progress in India. It did not reach the Imperial territories when it was known to prevail on the great roads leading to Orenburg, where it at last broke out. And when it did commence its ravages at that place, there seems to be no reason to believe that it prevailed within reach. It does not appear to have spread directly; nor, although its general course was north-west, does it seem to have held that course undeviatingly; but at one time it capriciously passed over 50 or 60 miles, and then retrograded on the country which had thus appeared to have escaped; at other times, certain places appeared happily to be exempt; but, five or six weeks after it had left the country, it broke out anew in those very places which had had reason to congratulate themselves on their escape.

4. The annals of Cholera prove, that when it made its appearance in a camp or a city, far from extending to every habitation, it was almost invariably con-

fined to particular portions of even the most populous places. Sometimes, in an army for instance, one or two regiments encamped together, or separated by other corps, were the only sufferers in an attack of the epidemic ; one division, or even one street only of a town, had the disease existing in it ; nay, its prevalence has been known to be limited to one side of a market-place. Removing a camp a few miles has frequently put an entire and immediate stop to the occurrence of new cases ; and when the disease prevailed destructively in a village, the natives often got rid of it by deserting their houses for a time, though in doing so they necessarily exposed themselves to many discomforts, which, *cæteris paribus*, we should be inclined to consider exciting causes of an infectious or contagious epidemic. The bare statement of these facts affords a strong argument against the doctrine of contagion or infection, as a source of Cholera Asphyxia." 84.

Mr. Bell justly observes that it is no proof that a disease is contagious, because all the inhabitants of a place have suffered from it, or because it has attacked the attendants of the sick. This is a disease running so rapid a course that it cannot be carried to any great distance. It is supposed that medical men have suffered more than others of their rank in cholera ; and this indeed we might reasonably expect, even if the disease were not contagious. Let us listen to facts.

" During the years from 1818 to 1822 inclusive, the numerical strength of the European troops in the Madras Presidency was kept up at 10,000 men. In the course of those five years 3664 cases of Cholera occurred in this force, of which 695 were fatal, or at the rate, per annum, of one casualty from Cholera to every 72 men. During the same period, the Madras medical establishment was kept up at 200 commissioned officers. In those five years, 33 medical officers were known to have had attacks of Cholera, of whom 13 died, that is, one in 77 per annum.—See Madras Report." 87.

The following passage will explain away one of the most triumphant arguments which the exclusive contagionists adduce in support of their doctrine.

" But it has been said to accompany troops, in marching into a district where it had not previously prevailed, and into which it has thus been introduced. This statement is so much at variance with the well ascertained habits of the disease, that it would require the most minute inquiry, and unquestionable evidence, to entitle it to credit. It has been repeatedly ascertained, that Cholera patients may be carried into hospitals crowded with patients labouring under other diseases, without these, or numerous hospital attendants, having the disease communicated to them. Yet it is asserted, that a regiment, travelling at the rate of six or ten miles a-day, has carried the disease along with it a hundred miles or more, communicating it to the inhabitants as it passed on ! We have seen that a camp, by shifting ground a short distance, has put a stop to the ravages of the disease. And is it to be believed, that a regiment cannot get rid of it, with no cause but contagion for its continuance, by ten or twenty marches ? I conceive, that this supposed proof of a contagious quality in Cholera may be otherwise accounted for. When travelling on circuit, I have found the disease prevailing in a district, before any report had been made of the fact, notwithstanding the most positive orders on the subject ; and I am persuaded, that were any of the instances, adduced in support of the statement under consideration, strictly inquired into, it would be found, that the usual apathy of the natives of India had prevented their noticing the existence of the disease, until the fact was brought prominently forward by the presence of Europeans. It should also be borne in mind, that Cholera Asphyxia is not a new disease to these natives, but seems to be in many places almost endemic ; whilst it is well known, that

strangers, in such circumstances, become more obnoxious to the disease than the inhabitants of the country. Moreover, travellers have, superadded to the remote causes of the disease, fatigue and road discomforts, which are not trifling in a country where there are neither inns nor carriages.

The following extract from the Journal of my first journey in India, is illustrative of some of the peculiarities, in this disease, to which I have adverted. In July 1819 I marched from Madras in medical charge of a large party of young officers, who had just arrived in India, and who were on their way to join regiments in the interior of the country. There was also a detachment of Sepoys, and the usual numerous attendants and camp-followers of such a party in India.

The Cholera prevailed at Madras when we left it. Until the fifth day's march, (50 miles from Madras), no cases of the disease occurred. On that day several of the party were attacked on the line of march; and, during the next three stages, we continued to have additional cases. Cholera prevailed in the country through which we were passing. In consultation with the commanding officer of the detachment, it was determined that we should endeavour to leave the disease behind us; and as we were informed that the country beyond the Ghauts was free of it, we marched without a halt, until we reached the high table land of Mysore. The consequence was, that we left the disease at Vellore, 87 miles from Madras, and we had none of it until we had marched 70 miles farther, (7 stages), when we again found it at one of our appointed places of encampment. But our camp was, in consequence, pushed on a few miles, and only one case, a fatal one, occurred in the detachment. The man was attacked on the line of march. We again left the disease, and were free from it during the next 115 miles of travelling. We then had it during three stages, and found many villages deserted. We once more left it, and reached our journey's end, 260 miles farther, without again meeting it. Thus, in a journey of 560 miles, this detachment was exposed to, and left the disease behind it, four different times; and on none of those occasions did a single case occur beyond the tainted spots." 91.

The instances where the mixture of cholera patients with others produced no extension of the disease, would fill a volume—and they were as numerous and remarkable in Europe as in India. Passing over Mr. Bell's observations on quarantine, we must make room for a short extract respecting restrictive cordons.

"A restrictive cordon assumes a different character. The effects to the sick, of a dread of contagion on the minds of their attendants, has been already hinted at. But its stanchest supporter admits, that contagion is but one of the causes of Cholera; while it must be evident to every one, that the remote cause of the disease pervades a portion of country, where it prevails for a time, and that all living, or coming within the bounds thus, for the time, marked out by the disease, are apt to be attacked. In a country free from sanitary restrictions, we have seen the inhabitants of infected spots find safety in flight. How different would their condition have been, had they been strictly hemmed in within the tainted limits. There cannot be conceived a situation more full of horror than a town, the site of which is infected with Cholera, and the inhabitants shut up in it.

The tendency, therefore, of admitting at once the existence of contagion in Cholera, in the present undecided state of the question, is injurious to trade, fatal to the sick, and fraught with melancholy forebodings to those who may be exposed to a visitation of the disease." 97.

We must now take leave of our author, and that with reluctance. Mr. Bell is an advocate for venesection in cholera.

"By bleeding in such circumstances we relieve the gorged vessels, and thus

enable the weakened energies of the circulating power, to act on the disburdened organs of circulation, and to restore the current of the blood. The lungs recover their function, pure blood is thrown into the left heart, the arteries are again filled with fluid fit to support life: this, it may be supposed, reacts on the sympathetic system, and by and by its energies are completely restored. In this way only, can the effect of blood-letting in Cholera be explained. No other method will account for the almost instantaneous recovery which so often follows venesection in such a condition of the system as has been described—a recovery more immediate than that which follows the removal of mechanical pressure from the brain. And it is confidently asserted, that in no case in which it has been possible to persevere in blood-letting, until the blood flows freely from the veins, and its colour is recovered, and the oppressed chest is relieved, will the patient die from that attack of the disease." 105.

During venesection the patient should be laid in a warm bed, and the blood encouraged to flow by the horizontal posture. Artificial heat to the surface should be applied in every possible way. Leeches and cupping-glasses are also to be applied to the abdomen. Stimulants internally must go hand in hand with venesection. Opium, æther, camphor, ammonia, peppermint, brandy, and calomel are the chief medicines. Mr. Bell is more favourable to comparatively small doses of calomel and opium exhibited frequently, than to large ones at longer intervals. The patient has a most ardent desire for cold drink, and Mr. Bell, as well as some other experienced practitioners in India, found it at least not detrimental to gratify their feelings by cold lemonade. It is curious that although the surface is so cold and bloodless, the patient has a horror of hot applications externally or internally. A warm bath, even below blood-heat has been found almost insupportable. One thing is certain, that heat should be applied to the surface, with as little fatigue to the patient as possible. The difficulty of applying hot or vapour baths with celerity, is a great drawback to our therapeutics, and he who could invent a machine or means of applying heat to the surface of the body, with dispatch and economy, would deserve well of his country. Before we close the volume, we shall indulge our readers with one more short extract.

"When marching up the country with a detachment of troops in July 1819, a camp-follower was brought into my tent (9 o'clock, p. m.) in a blanket. He was reported to have been suffering from symptoms of Cholera during the whole afternoon. His skin was cool; pulse weak and thready; had spasms in the extremities; urgent thirst. I immediately bled him, and with some difficulty obtained a full stream. When about twenty ounces of blood had been removed, the man felt complete relief. Some brandy and water was administered, and he returned with his friends to his own quarters. He was able to accompany the detachment next morning." 119.

We cannot part from Mr. Bell without expressing the pleasure and profit with which we have perused his work, which ought to be in the hands of every practitioner without delay.

[MR. ORTON.]

IV. It is now time to turn to the work of Mr. Orton,* a gentleman who

* An Essay on the Epidemic Cholera of India. By Reginald Orton, Surgeon of the 34th Regiment of Foot. Second Edition, with a Supplement, November, 1831.

has had ample experience of the disease in India. This is the most systematic and extensive work which we possess on the subject of Indian cholera, and we regret that we cannot afford sufficient space for a regular analysis of the book; but still the importance of the subject, and the experience of the author, demand from us all the space we can possibly spare. While the disease was ravaging at a great distance, the minute symptomatology of cholera was not interesting to practitioners in this country, who contented themselves with reading the more prominent features, such as the spasms, the vomiting and purging, and the remarkable quality of the discharges. But now that the disease is amongst us, it becomes necessary to be thoroughly acquainted with all the symptoms of the malady, in its insidious approaches as well as in its most furious onsets. On this account alone, Mr. Orton's book is very valuable. The following graphic description should be well studied.

"The attack of this epidemic is usually sudden and violent, but, in a great majority of instances, not without some premonitory symptoms. It is frequently preceded by a simple diarrhoea, continuing several days, and still more commonly by other slight affections which are more characteristic of the disease. Most commonly it is in the middle of the night, or early in the morning that these ominous disturbances are first felt. An extraordinary depression of spirits and general uneasiness comes on, attended by tremor and sense of debility; giddiness and headache, and occasionally ringing in the ears, are also felt, particularly on rising from the recumbent posture, or making any sudden movement. Pains resembling those which attend the accession of fever are sometimes felt in the limbs. The bowels are gripped occasionally, and natural loose stools occur; nausea comes on. The circulation and the temperature of the body are variously disturbed, but most commonly the pulse is accelerated and weakened, and the skin is moist, and colder than usual to the hand of another. These symptoms, or some of them, not unfrequently continue many hours, or even a day or two, without proceeding much farther, or exciting much attention.

In general, however, the severer affections quickly set in. The stools become extremely frequent and watery, of a peculiar unnatural smell, and greyish white colour, so as exactly to resemble congee or barley water in appearance; vomiting comes on, and after the common contents of the stomach, a clear watery fluid, interspersed with flakes of mucus, is discharged; copious sweat breaks out; and the anxiety and the debility rapidly increase. The countenance assumes a very peculiar appearance, by which alone the disease may generally be distinguished. This is so remarkable as occasionally to render servants recognized with difficulty by their masters, even in the early stage of the disease.* It is difficult to be described, but it bears a striking resemblance to the appearance of age: and seems to arise from the paleness, wasting, and shrinking of the features, and the depressed and disturbed state of the mind, conveying into the countenance a strong expression of care, anxiety, and alarm.

It is usually during a fit of vomiting that spasms of the muscles are first felt. They are almost invariably of the tonic kind resembling common cramps; recurring in paroxysms of the duration of a minute or two, and at intervals of a few minutes, and attended with excruciating pain. They affect, occasionally and in turns, the whole of the muscles of voluntary motion, but particularly those of the legs and feet. In general they are far from extending at once over the whole muscular system, for they very commonly attack but one extremity at a time; or

* See "Reports on the Epidemic Cholera," published by the Medical Board of Bombay. Preface.

even only one muscle, particularly one of the gastrocnemii, drawing up its belly until it resembles a clenched hand in hardness, and almost in shape. The abdominal muscles and those of the chest are frequently affected; but not particularly so. In no instance have I had occasion to believe that the spasms were injurious by interrupting respiration or circulation. Great disturbances of these functions are indeed observed to accompany them, but these effects equally follow when the extremities only are affected. The returns of the paroxysms of spasm are frequently brought on by the slightest exertion; and in particular, they appear to be intimately connected, in regard to cause, with those of vomiting; for these affections frequently recur together. Great debility of the circulating system also very generally attends the accession of the spasms or severe vomiting. I have often found the pulse sink at once, on the first appearance of spasm in the muscles, from the natural state, so as scarcely to be felt, or even disappear entirely from the wrist in an instant; and in such subjects as are not affected with spasms (for they are not a constant symptom), this fatal failure of the circulation not unfrequently appears with the first paroxysm of vomiting. The frequency of the pulse is very variable. In many instances it is rapid from the commencement; in others its frequency is little changed in the early stage; but in all it becomes extremely quick as the disease advances.

The respiration from the first severe accession is observed to be hurried and oppressed, and is frequently complained of. As the disease increases in violence, the colour of the whole surface changes to a livid hue, particularly round the eyes and at the extremities. The surface is bathed in cold sweat; the hands and feet, and afterwards the whole body, rapidly grow cold. The plumpness and natural expression of the features disappear; they become sharpened—in short, the whole *facies Hippocratica* succeeds; and with a rapidity which is very surprising, for it is scarcely possible to conceive how so great an emaciation of the countenance can take place, as it frequently does, in an hour or two." 3.

And yet a small number only of the symptoms are comprised within the above description. An inextinguishable thirst is usually complained of; and although the body is cold, there is an ardent desire for cold water, which, when swallowed, affords no relief to the morbid sensation. An acute pain is felt in the region of the stomach, increased on pressure. The urine, in the early stage, is usually pale and watery; but, as the disease advances, the urinary and biliary secretions are suppressed. The hands are sodden with cold sweats, shrivelled and wrinkled, like those of a washerwoman. A strong and disagreeable odour, *sui generis*, is exhaled from the body. This odour can never be forgotten. The patient is not sensible of the great diminution of temperature in the body—on the contrary, he often complains of heat, and is constantly throwing off the bed-clothes. On the accession of the spasms, or thereabouts, the great struggle takes place, and is quickly decided. In a few hours a remarkable change appears, which might lead an inexperienced practitioner off his guard, and to form a favourable prognosis. The spasm, the vomiting, and the purging cease, usually about the same time. The stomach becomes retentive, and clysters are not rejected. A tendency to sleep occurs—but the state of the circulation, and the cold livid condition of the skin, together with the ghastly expression of the countenance, forbid all hope. Death, in fact, is at hand! When Nature alone, or assisted by art, is about to triumph, a sound sleep is the invariable precursor—and that, apparently, not owing entirely to the opium which has been taken. It happens at all hours of the day or night—even in the midst of noisy and crowded wards. The patient awakes relieved—has a bilious evacuation—passes urine—and afterwards has a considerable purging of black,

green, or yellow feculent matters. The pulse rises—the skin grows soft and hot, with copious perspiration. The sensations are most comfortable. This re-action sometimes rises to a considerable height, assuming all the characters of the idiopathic bilious fevers of the tropics. In many instances, the fatal effects of the poison were instantaneous, and the patients dropped down as if struck by lightning, and quickly expired. The burning pain in the stomach, increased on pressure and the reception of food, is considered by Mr. Orton as indicative of inflammation, especially as the *post-mortem* appearances tend to confirm that inference, whenever the disease has continued long enough for that process to produce its proper phenomena in the body.

But there are great irregularities and anomalies in this terrible disease. The spasms have been often absent. Thus, in one report, by Mr. Conran, the epidemic was found to exhibit scarcely any instance of cramps or spasms, while all the other usual symptoms were present. The absence of purging was also often noticed. Dr. Girdlestone does not even mention this symptom. Vomiting, though one of the most constant phenomena, has been frequently absent. But we must refer to the work itself for an account of the various anomalies observed by the author and others.

We now come to the second chapter, containing the results of *post-mortem* examinations.

"A dark blue or livid colour of the surface of the bodies; existing in various degrees in different parts and different subjects, and most remarkable at the extremities. It appeared to prevail most in the more robust and sanguineous subjects, and in the more rapid cases. Blood taken from both the venous and arterial systems was found to be of a very unusual dark and purplish colour.

The internal organs in general were found much gorged with blood. This was particularly remarked in the veins of the mesentery and stomach, and in the lungs.

The stomach exhibited many extensive patches of a crimson colour, usually confined, in a great measure, to its inner coats. Similar appearances existed in the intestines, most remarkable on their inner surface, but appearing externally in a greater degree than in the stomach; they were much more evident in the small than in the large intestines, and often occupied large portions, or the whole of the canal. The degree in which these appearances in both stomach and intestines existed, seemed in general to bear some relation to the duration of the case, for in such as had been of several days' continuance they were highly marked.

The stomach contained the ingesta which had been given for some hours before death in considerable quantity, and little altered either in appearance or smell. Calomel was frequently found at the bottom of the fluid contents, and adhering in various places to the mucous coat. The intestines were in a great measure empty. Their contents were usually free from the slightest tinge of bile, and consisted chiefly of a dirty whitish mucus, resembling congee or thick barley water, slightly tinged with milk. Great portions of them, particularly the large intestines, were frequently found contracted, so as with difficulty to admit the finger into their cavities.

The gall-bladder contained the natural quantity of bile, of no very remarkable appearance. The gall-ducts were found pervious, the bile flowing readily into the duodenum on pressure being made on the gall-bladder. No unusual accumulation of bile existed in the ducts or their ramifications; but a small quantity of that fluid, of the healthy appearance, might be squeezed out of each of the *pori biliarii*.

The urinary bladder was almost invariably found contracted to the size of a

hen's egg, without containing a drop of urine ; but smeared internally with a whitish mucus, similar to that found in the intestines. The ureters contained the same substance.

The veins of the brain were much distended with black blood. The minute arteries of the membranes of the brain were frequently found injected. These appearances of vascular action were most marked in subjects who had died perfectly comatose or apoplectic, and like those of the stomach and intestines in protracted cases." 42.

The inferences which our author draws from the post-mortem appearances are, that a high degree of venous congestion prevails generally in the internal organs—with a universal tendency to inflammation.

The third chapter is occupied with that thorny subject—the proximate cause of cholera. The circumstance, he observes, which strikes us most in this disease, is the prevalence of morbid phenomena throughout the whole system. No one organ is solely affected—hardly, indeed, can it be said that any one structure is more affected than another. The brain, the heart, the lungs, the digestive tube, liver, kidneys, skin, and even the muscular system, seem to be simultaneously stricken with the morbid poison. Arrest of the functions of secretion, and of the powers by which heat is generated, is one prominent feature of cholera.

" The conclusion to which these views, and others which shall subsequently be unfolded, appear to me irresistibly to lead, are the following :—

1. *That the proximate cause of cholera consists in a diminution of the energy of the nervous system.*

2. *That the deprivation of nervous influence thus produced, extends in various degrees to all the functions ; and immediately produces the phenomena of the disease.*" 61.

On the above hypothesis, he thinks all the various phenomena of the disease may be accounted for. The author then goes on, in another chapter, to analyze and explain the various morbid affections of the muscular system, the secretions, the senses, the circulation, and lastly, the respiration and changes in the blood.

1. It is well known that profuse depletion by bleeding will induce convulsions. The cramps and spasms, therefore, of cholera, may well be attributed to privation of nervous influence from the brain.

2. It is now universally admitted that secretion is dependent on nervous influence. That great feature in cholera, the suppression of all secretions, is explicable only by the failure or diminution of nervous power. It is more difficult, in this mysterious disease, to account for the immense increase of fluids thrown out from the surface of the stomach and bowels. These fluids are, however, any thing but secretions. They are rather exudations.

3. The morbid secretions in cholera are numerous. Nausea, pain, heat, thirst, and anxiety, are referrible to the stomach ; while vertigo, tinnitus aurium, headache, suppression of the senses, as of sight and hearing, appertain, of course, to the brain.

4. The sinking of the circulation is the most urgent, if not the most characteristic, of all the symptoms of cholera ; and the rapidity with which it supervenes, in spare habits, is surprising. In a majority of cases, the pulse becomes small and weak on the accession of the more severe symptoms; but in the weakly natives, nothing is more common than for it to disappear en-

tirely from the wrist on the appearance of the first fit of vomiting or the first loose stool. The author endeavours to account for this phenomenon and its opposite, inflammation ; but we fear we have few clues to the explication of this and many other of the morbid phenomena in cholera.

5. The respiration and the changes of the blood next engage Mr. Orton's attention. The nervous system, though the primary mover, is itself subject to be controlled by its own subordinate agents. The brain cannot act without a supply of decarbonized blood from the heart, and it is evident that, in cholera, the decarbonizing process in the lungs is suspended, or greatly decreased. Our author thinks it extremely probable, that this failure of function in the respiratory apparatus is the cause of the diminished energy of the nervous system, which produces the other phenomena of the disease.

In the 5th chapter of the work, our author institutes an interesting inquiry into the relations of cholera to other diseases. The famous and fatal sweating-sickness is first examined, and Mr. Orton thinks it extremely probable that it was identical with cholera morbus. We are by no means convinced on this point. The following passage from Armstrong, however, is not a little curious, as extremely applicable to cholera.

“ Here lay their hopes (tho' little hope remain'd)
With full effusion of perpetual sweats
To drive the venom out. And here the Fates
Were kind, that long they linger'd not in pain.
For who surviv'd the sun's diurnal race
Rose from the dreary gates of hell redeem'd :
Some the sixth hour oppress'd, and some the third.
Of many thousands few untainted 'scaped :
Of those infected fewer 'scap'd alive ;
Of those who liv'd, some felt a second blow ;
And whom the second spar'd, a third destroy'd.” 121.

Time has almost buried in oblivion the horrors of this mammoth of diseases ; and it is to be fervently wished that its memory may not be harrowed up by cholera !

Mr. Orton thinks it will probably be found that some other epidemics, which have received the name of plague and pestilential fever, have been no other than cholera, in some of its various forms. Burserius classes the sweating-sickness under the head of *ephemera maligna*, and gives an epidemic of this kind which attacked the soldiery, but leaves us in the dark as to date.

“ Many were attacked at the same time ; their faces became of a bluish yellow ; their eyes were like those of a person half dead, sunk in the sockets ; their nose and forehead became sharp, and their skin rigid ; their superior and inferior extremities were at first pale, a little after they became cold, and successively livid and black ; the pulse was very weak.” 128.

An epidemic that ravaged Marseilles, in 1720, bears a still more striking similarity to the cholera ; but we dare not dwell longer on this subject. The relation which cholera bears to the effects of poison is very remarkable. Orfila relates the case of a man poisoned by an ounce of tartar-emetic, and adds—“ the irritation which it excited on the alimentary canal produced a set of symptoms which I compared to *cholera morbus*.”

The sixth chapter is on the remote causes of epidemics in general. We must pass rapidly over this chapter. Speaking of the various efforts which have been made to elucidate the remote causes of these fatal visitations, he observes—

“ I cannot pretend to give an abstract of these researches, but the inference which appears to have been almost unanimously drawn from them, and which is at once the most obvious and apparently the only feasible way of accounting for these visitations, is, that they depend primarily on some disordered state or states of the atmosphere. Many other causes have indeed been adduced, that doubtless contribute to produce them, the principal of which is contagion: but it has been clearly shown, that that agent alone, in a vast number of instances, is totally insufficient to account for their prevalence: for, on one hand, it is found that they frequently appear when there is no sufficient evidence of the presence of contagion, and spread so suddenly and extensively as to preclude all explanations of that kind, though the importation of infected persons or the morbid fomites is proved; and, on the other hand, they are found not to spread generally and to cease though these causes are actually present.” 159.

Mr. Webster, of America, has written two volumes to prove that the causes of epidemic diseases arise from the earth, and are diffused through the air. A short quotation is well deserving a place here.

“ Mr. Webster believes that pestilence and earthquakes depend upon one common cause, which excites into action the internal fires: but he supposes the action or fermentation may precede for months, or even years, the explosion in earthquakes; and by means of insensible vapour, or heat, or electric discharges, the elements of water and air may be affected in such a manner, as to impair the principle of animal and vegetable life.” 161.

Let us bear in mind what Sydenham says.

“ It proceeds from a secret and inexplicable alteration in the bowels of the earth, whereby the air is contaminated with such effluvia as dispose bodies to this or that disease, as long as the same constitution prevails; which at length, in a certain space of time, withdraws and gives way to another.” 163.

We must pass over three or four chapters dedicated to the etiology of cholera, with the exception of a short quotation shewing the author's opinions on contagion.

“ Contagion, from many circumstances, is a cause whose agency it is more difficult to disprove; but, as far as general opinion goes, it is against the supposition of the disease being propagated in that way. All the evidence which I have obtained on both sides of this question, will be briefly stated in a subsequent part of the work; and it will be found clearly against the opinion of its infectious nature. The decision of the question is less necessary here, as it is admitted that contagion alone is inadequate to the production of an epidemical disease. But the influence of contagion in this epidemic may at once be entirely denied, on the sole evidence of its most extensive ravages on the first day of its appearance at a place, and its entire disappearance in the course of a few days; as in the instance already mentioned of the 34th regiment, and many others which might be adduced.” 166.

Such is the opinion enumerated at page 165 of the work; but at page 313, we find a different view taken of the disease. He gives us his opinions in these propositions.

"*Prop. I.* The disease is contagious ; that is, it is conveyed either mediately or immediately from person to person.

II. There is reason to believe that the virus which propagates the disease is of a very subtle or volatile nature, and is readily conveyed by the atmosphere ; whence it arises that there is little if any increase of danger from the most intimate communication with the sick during the prevalence of the disease, above that which attends the common intercourse of society.

III. The latent period of the disease, or that which elapses between the application of contagion and the appearance of symptoms, is usually very short, and even sometimes imperceptible, but on some occasions it has been more protracted." 313.

It is abundantly evident that Mr. Orton has changed his opinions at a more recent period, and no man can be blamed for altering his opinions, from conviction. Mr. Orton does not, like too many others, give but one side of the case. He fairly states the facts pro and con, and is at full liberty to draw his own conclusions. From the passage which we have marked in italics, in the second proposition, our readers will perceive that the admission of Mr. Orton's doctrine can make but little difference as to sanitary cordons. The following passage is, at least, consolatory.

"The evidence of the anti-contagionists is necessarily of the negative kind. One of the strongest general facts which they produce is, that the numerous medical and inferior attendants on the sick in the hospitals have often entirely escaped, or suffered in a very trifling degree from the disease ; and it must be admitted, that in a vast number of instances in India, those persons have suffered no more from their employment than if they had been attending so many wounded men. This is a fact, which, however embarrassing it may be to the medical enquirer, is highly consolatory in a practical point of view, both to him and to all whose close intercourse with the sick is imperatively required.

In Bengal, not more than three medical officers out of the whole list were known to have been attacked up to 1820, and but one died, though nearly the whole of them had largely witnessed the disease. This is a strong fact, which probably will have greater weight than Mr. Jameson's general assertions to the same effect :—that the medical observer in Bengal did not find his assistants or sick attendants more liable to be attacked with the disease than other persons ; nor when one member of a family was ill, that the rest were more liable than others ; and that when several of a family were attacked, it was in general simultaneously and not in succession. It is however more particularly stated, that in the Marquis of Hastings's camp, where the disease prevailed so severely, in no instance were the bearers of the sick—nor the immense number of hospital attendants—nor soldiers visiting their dying comrades—nor sick in hospital (with the exception of convalescents), attacked more frequently than other persons not thus exposed." 316.

Mr. Orton adduces the testimony of many medical practitioners, all of whom state that "their numerous attendants, though mixed with the cholera cases, either entirely escaped, or suffered but in a very moderate degree. And be it remembered that they were constantly employed in rubbing the patients for the removal of the spasms, placing them on the stools, in the baths, &c." Mr. Annesley, whose authority is so weighty, goes to the same point, setting aside the recent examples on the Continent. But these, and thousands of other facts appear to Mr. Orton, at page 320, "as no more than dust in the balance against those which may be opposed to them." This declaration, too, in the very same volume which denies contagion at page 166 !! But the most astonishing circumstance is, that, at page 166,

he refers to this "subsequent part" of his work, where we shall find the balance all in favour of the anti-contagionists !! We blame not, but admire, a man for changing his mind when urged thereto by conviction ; but inconsistency and vacillation are very humiliating to the pride of science ! The following is a fair sample of the proofs of contagion brought forward by Mr. Orton, and against which all other facts are considered as "dust in the balance" !

" And in the following year, the same officer reports, that a party had arrived there suffering from the cholera, which had attacked them on their march after exposure to a heavy storm of wind and rain on the Kistna, and destroyed about sixty of them before their arrival. The disease did not then exist in the station ; but three or four days after the infected party arrived, it appeared in a detachment of artillery in barracks, two hundred yards in front of which the party was encamped. It spread to the native inhabitants and other troops, excepting the 30th regiment, which was in barracks at the distance of a mile ; they entirely escaped. He also traces several cases in succession to close personal intercourse, and finds a medical officer and two dispensers of medicine attacked. He adds, that a medical officer, arriving a fortnight afterwards, reported that *the villages on the route from the Kistna were all suffering from the cholera, and that the inhabitants had stated to him that they had got it from that detachment.*"* 323.

We would be glad to hear how Mr. Orton accounts for the sudden breaking out of the cholera, after "the heavy storm of wind and rain on the Kistna ?" Did it there arise from contagion ? This is not attempted to be proved; but it is inferred, that a disease having once sprung up from natural causes, is always after propagated by contagion ! But, after wading through various conflicting opinions, we find our author casting anchor in a temporary creed.

" We are therefore forced to the conclusion, however at variance with the common laws of contagion, that in this disease—at least in India—the most intimate intercourse with the sick is not in general productive of more infection than the average quantity throughout the community.

This conclusion is further strengthened by another hiatus in the evidence for contagion, viz. that though the importation of disease has so often been found immediately to precede its appearance in the inhabitants of a place, and even the first cases to arise in the neighbourhood of the imported virus, it has scarcely ever been possible to trace these cases to personal communication in any thing like a regular series, as may generally be done with the plague and other decidedly contagious disorders ; and similar facts have been observed in much later stages of the progress of the epidemic. Since its entrance into Russia, it has more than maintained the contagious character which it exhibited in India. In numerous well-attested instances, the appearance of the disease in places previously healthy has been immediately preceded by the arrival of persons from infected places, and such persons have been the first to suffer. But here, as in India, it seems to have happened, that no sooner was the disease thus conveyed into a place, and perhaps a case or two seen in the new comers, or near them, than the thread of its course through the rest of the community was lost :—its progression from its origin till it gained head could not be traced. The deficiency of evidence on this particular point has been strongly adverted to in a valuable critique on the subject, which has appeared in the 108th number of the Edinburgh Medical Journal. It contains also a parti-

cular statement of the staff physician at Orenburg, showing, that, there at least, the disease had also exhibited that other marked anomaly which has been noticed, of the immunity of attendants on the sick. Dr. Smirnov states that his hospital attendants, twenty-seven in number, during the two months the disease prevailed there, when two hundred and ninety-nine patients were treated in hospital, entirely escaped attacks, although they were constantly employed in offices which brought them into the closest contact with the sick. So also the physicians in continual attendance, and various other officers of the hospitals, and even the washerwomen, all escaped.

The obvious inference from all these facts, and which can alone reconcile their contradictions, is, that the *morbific virus is of a most subtle and active nature, so that the atmosphere around the sick is quickly contaminated by it to a considerable distance, whence all who breathe such infected portions of the medium are equally liable to its influence; and when it prevails generally throughout a city, the whole surrounding mass, though not equally, is sufficiently poisoned to produce the full effect of contagion.* From this mobility of the virus, and from the disease almost immediately following its application, it is enabled to spread with a rapidity, which, excepting in the instances of the sweating sickness and influenza, appears to be unparalleled in the history of epidemics; and everywhere to strike its invisible but deathly blow where it is not warded off by insusceptibility: whilst in the great mass of people, who happily are thus guarded, probably the morbid secretions may be rubbed into the mouths of the absorbent vessels on the surface—or the effluvia arising from them inhaled into the lungs—or they may be taken into the stomach, or even inserted into the opened veins, without adding to the danger.” 328.

By the way, the passage which we have quoted in Italics completely anticipates the celebrated propositions, or *official axioms*, promulgated by Drs. Russell and Barry. There is a remarkable discrepancy, however, between these claimants for priority of discovery. It is well known that Drs. R. and B. relinquish the idea of contagion by fomites. Not so Mr. O.

“Indeed it is not unlikely, that it is by means of fomites that the disease is in a great measure propagated over a country. During the existence of so acute a disorder, the patient is in no condition of conveying it from place to place; and if his power of communicating it is confined to the actual period of its existence in his frame, which we must suppose, it must be very short.” 347.

Here, then, the contagionists are at variance, one (the Board) maintaining that it is by the person, and not the clothes, that cholera is propagated—the other, Mr. O., conceiving that it is by the clothes, and not the person!! It is a fact, after all, that Mr. Orton adduces far more evidence for the contra than for the cons in this chapter, and that he seems to have altered his opinion, or doubted about the point where he was to fix his creed, throughout the whole of the investigation.

ATMOSPHERIC INFLUENCE.

From attributing every thing to atmospheric influence, at one time, people are now running into the opposite extreme, and denying any operation to atmospheric changes. This has chiefly arisen from the circumstance of cholera having pervaded many climates of great diversity in their temperature. But these people should recollect that cholera has, in all ages, been the inhabitant of all climates, at some period or other of the year—and generally at a particular period. The present epidemic, though it has

sometimes prevailed at unwonted seasons, yet has usually increased with increased temperature, and *vice versa*, both in India and in Europe.

The following propositions, with which Mr. Orton prefaces this chapter, are fully borne out by the various facts which he has collected from authentic sources.

"PROPOSITION IV. Great irregularity and intemperature of the seasons has preceded and attended the rise and first spread of the epidemic over India.

V. The disease has prevailed in India chiefly during that half of the year when the sun was on the same side of the equator.

VI. A high atmospheric temperature is a great cause of the disease.

VII. A condition of the atmosphere indicated by the formation of thick clouds, heavy rain, and storms (particularly thunder-storms), or the immediate approach of these phenomena, is a great cause of the disease." 348.

It has been triumphantly adduced, as proof that atmospheric influence does not enter into the etiology of cholera, that "of the five camps visited by it, the centre division was attacked in the cold season, the Nagpoor and Sangur divisions in the height of the hot winds, and the Raja Pootana and Kurnaul divisions, whilst it poured down rain." Let us look at one of these divisions, the centre, and see what were the circumstances attending its visitation by cholera.

"It was an almost isolated attack, for the disease did not exist, at least to any extent, in the surrounding countries, so that none could tell from whence it came or whither it went. Nor did it subsequently spread in the neighbourhood, though five thousand persons deserted and dispersed themselves over the country. The intercourse between Allahabad and the camp was very great, yet the disease reached not the former place till four months after (see Mr. Spilsbury's paper in Trans. of the Med. and Phys. Society of Calcutta, August, 1829). Even some corps of the division stationed at a little distance escaped, though an infected party arrived among them from the main body. It was therefore at this time incapable of spreading beyond the camp by contagion. It is probable that the attack was owing chiefly to local malaria, combining with a high state of predisposition from the fatigue the army had previously undergone. Mr. Jameson states—"In the three grounds of encampment in which the disease prevailed most, the soil was low and moist, and the water foul, stagnant, and of brackish quality, and everywhere not more than two or three feet from the surface of the earth, and the vicinity abounded in animal and vegetable putrified matter; whereas at Erich, where the army regained its health, the situation was high and salubrious, and the water clear and pure from a running stream." 350.

The foregoing statement shews that if atmospheric influence were absent, terrestrial causes (to which indeed we attach much more importance) were in abundance. The visitation in question is pregnant with information also, as to the non-propagation of the disease by personal communication.

So far back as 1781, a body of 5000 troops were suddenly assailed by cholera at Ganjam, on the 22d of March.

"Men in perfect health dropt down by dozens; and even those less severely affected were generally dead, or past recovery, in less than an hour. Besides those who died, above five hundred were admitted into hospital that day. On the two following days the disease continued unabated, and more than one half of the army was then ill." It was at first attributed to poison, but it was soon discovered that the disease existed in the villages on their route, prior to their reaching Ganjam. There is no precise information of the state of the weather at the time, but it is stated that "they had been marching almost incessantly for six days through sand and salt water; a violent wind blew day and night along the whole shore,

and at night it was accompanied with such a penetrating moisture as to wet through the thickest woollen cloths.' " 353.

It appears that the year 1816 was exceedingly remarkable in Bengal for deviations from the usual course of the seasons. One earthquake occurred in April, and another in July. A great drought took place in the middle of the rainy season, followed by a deluge of rain, occasioning such an inundation as was unparalleled in the memory of man. These phenomena, however, were only accompanied that year, by an exuberant crop of bilious remittent fevers. It was in the next year that the epidemic cholera broke out.

" " In February, 1817, the singular deviations from the ordinary course of the seasons which marked that year began, for that month had more the appearance of an autumnal than a cold weather month. It rained heavily every third or fourth day.' March was remarkable for thunder-storms, very heavy rains, cloudy alternating with clear weather, and southerly winds. ' The same kind of weather prevailed during the whole season, over that side of India, and from Loodianah to the Presidency, there was scarcely a district or village in which the prospects of the harvest were not blasted by the heavy falls of rain, and long-continued humidity of the atmosphere.' The two next months were not very different from those of ordinary years, the weather being very hot, and broken by occasional storms and falls of rain. The rainy season set in twenty days earlier than usual, and proved to be one of uncommon violence. ' In June and July there was hardly a dry day, and before the end of the latter month the river was quite full, and the country nearly under water. In the districts of Jessore, Backergunge, Nuddea, and every portion of the Gangetic Delta, there had been a long protraction of very heavy rain ; and nearly the whole country, especially in the lower division of the province, was one sheet of water before the middle of August.' " 356.

It was about the end of May, or beginning of June, 1817, that the epidemic commenced in various places—though the exclusive contagionists find it very convenient to locate it in the city of Jessore, at a later period. It was in the district of Nuddea, not of Jessore, that cholera commenced.

" It is however shown that this was far from being its sole local source. Such and so striking being the circumstances attending the rise of the malady, and its first and principal ravages all over Lower Bengal, we may fairly infer that it was owing to this exaltation of the common causes of endemic or sporadic disease that it took on the epidemic and contagious form, and thus became capable of diffusing itself far and wide over the earth." 357.

Mr. Orton is of opinion that, as far as facts can be ascertained, the propagation of cholera through India, and afterwards through Europe, required favouring circumstances, similar to the above-mentioned, else it would not have extended its ravages so far and wide. It is to be confessed, however, that we have no sufficient data on which to ground any inference respecting atmospheric influence in originating or propagating the disease. The following historical facts are important.

" The influence of season on the disease during its progress through Persia and Turkey, appears to have been at least as evident as in India ; for it appears from the statements of Dr. Rehman that in the whole of its course, for three years, from the shores of the Persian gulf to the Mediterranean in one direction, and to the borders of Russia in Europe in the other, it prevailed *only in summer*. It first appeared in these countries in 1821, at Muscat, a place so notorious for heat that

it is termed ‘ Hell’ by the Persians, and during a season of extraordinary heat. In the course of that summer it extended from Busheer as far as Yezd in the centre of Persia, where it ceased in the winter, and re-appeared at the same place early in the following year. At the same time it extended in the other direction from Bussora as far as Bagdad, where also it is lost towards the end of the year, and in like manner re-appears at Mosul, higher up the Tigris, in the following July. In that Summer it travels from thence to Aleppo, and from Yezd to Ghilan and Mazenderan, on the southern shore of the Caspian, at all which distant places it again ceased on the approach of winter. In June, 1823, it re-appeared in the neighbourhood of Aleppo, and prevailed to some extent on the Syrian shores of the Mediterranean; but in this direction its progress finally ceased in that year. In April, 1823, it also re-appeared in Mazenderan and Ghilan, extended along the western shore of the Caspian, and reached Astrakhan in September. It had then attained the 46th degree of latitude, and its virulence seemed completely exhausted. It shortly ceased, after destroying only one hundred and forty-four persons in that city, and extended no farther. And as it ceased to advance for six whole years, the few who were watching its progress doubted not that it had at length reached its *ultima thule*, being incapable of existing in the more temperate regions of the north. But we were then, and probably still are, very imperfectly acquainted with the capacities, the habitudes, and strange varying features of this *Avatar of Siva*—which, like that stern deity, with his crest of snakes and necklace of skulls, seems to have a great propensity to *stalking round the earth.*” 362.

The following passage, commemorating a sudden and awful outbreak of cholera in a marching troop, succeeded by a terrific thunderstorm the same night—a thunderstorm which the inhabitants of these Isles cannot form an idea of, is worth recording.

“ The night of the day in which the disease appeared in a party of troops under my charge was marked by a thunder-storm. The anxiety and fatigue attendant on the occurrence, with perhaps a shade of personal apprehension, which the stoutest heart might be allowed to feel on such an occasion, were to be borne amidst that war of the elements, from which we were separated only by a few folds of cotton cloth ; and, as if to add a climax to the scene, a flock of jackals kept howling, or rather wailing in their ordinary manner, all night round the camp ; emitting in infinite variety of chorus, sounds closely resembling those of human beings in distress. It required no great stretch of the imagination to fancy for a moment, that they were the voice of the hydra-headed demon of the pestilence, mocking the sufferings of his victims ! ” 377.

But the influence of LOCALITY in the production and extension of cholera, is a more interesting and, we imagine, a more useful subject of investigation than that of aerial influence, over which we have no control, even if we had a correct knowledge. The following are the preliminary propositions of our author.

- “ PROPOSITION IX. The disease shows an evident preference for the low and level parts of a country, and avoidance of more elevated tracts.
- X. It is found to prevail most severely in all the moist, close, and filthy parts of any city or neighbourhood.
- XI. It commonly follows the course of rivers, both navigable and unnavigable.
- XII. It prevails most severely in all those countries and places, where, from the prevalence of the endemic fever, malaria is known to exist ; and in such situations its epidemic duration has commonly been greatly protracted.” 401.

No sooner had cholera begun to emerge from the low and level territory

of Bengal, than it was found to spread along the lines of country similar to those in which it was first engendered. It was repelled, at first, by the elevated plateau or first range of the Himalaya Mountains, running parallel with the Ganges. This was the case in other parts of India, during the first onset of the epidemic at least. "And not only were the elevated tracts and table-lands partially or wholly exempted, but the insulated mountains and hill-forts, as Khotass, Adjeghur, and Kallingur, which enjoyed an entire immunity, whilst in the plains all around, even to their very feet, the pestilence was sweeping off its tithe of victims." Unhappily this immunity was not permanent. The stupendous Himalaya alone proved a barrier which the malady was never able to pass. In its subsequent eruptions, it rarely failed to reach the place it had previously spared. The Neelgherry Mountains appear to have hitherto escaped. The remarkable attachment of cholera for the courses of large rivers is well known, and has been seized upon by the ultra-contagionists, as proof positive that the disease was carried along by human intercourse. They never stop to enquire whether this intercourse always exists, and whether other causes than contagion may be taken into account. India, which has furnished us with so much information on all other points, has also made known some curious facts bearing on this part of the investigation, which we would strongly recommend to the consideration of the exclusives. In Bengal, great traffic is carried on by means of the Ganges and its several contributory streams, and many of the great roads run along the banks of the rivers. Here the contagionists had fair grounds for supporting their doctrine of cholera by intercourse. But the peninsula of India also presented great rivers, on the banks of which the disease loved to dwell; but, unfortunately for the contagionists, there was little or no navigation intercourse on these streams, nor great roads along their banks. Hear what a contagionist (a contingent contagionist, we allow) says upon this subject.

"To what are we to attribute this characteristic of the epidemic? Its explanation, though not single, is very obvious—*human intercourse and malaria*. The great rivers of Bengal are also the great channels of internal communication, which is carried on either on their surfaces, or on the roads along their banks. The most populous places *all lie on the rivers*, and the intercourse between them must be very great.—No wonder that this especial visitant of man is found accompanying him on his journeys: such has also been the case on the great Rivers of Russia, and the fact has been traced to the same cause. *But in the peninsula of India the case is very different, for there navigation is scarcely carried on even to the most trifling extent on any one of the rivers, and scarcely an instance can be mentioned of a great road running on the bank of a river, for they almost all cross them; but the existence of the other cause, malaria, in these situations has already been made evident.*" 412.

The foregoing extract speaks for itself. In Bengal, "all the most populous places lie on the rivers—and where could we expect to find the disease most prevalent but in those situations where it had most proyender? The same, we believe, will apply to the great rivers by which the disease entered Europe. But in the peninsula of India, where the rivers had no traffic and the banks no roads, the cholera appeared wherever there were people to work upon. Some curious instances of the partiality which this fiend evinced for certain localities, are contained in the following passage. All such instances are cautiously slurred over by the exclusive contagionists.

" In a large camp in Candeish, one corps at the *left* of the line was found to suffer extremely from the disease, whilst that which was at the *opposite extremity* entirely escaped. The *former* was in a lower and more confined situation than the other, the *latter* being situated between two hills, where there was a strong current of air. On the corps which escaped marching, another corps arrived and took its place, and enjoyed the same immunity, the epidemic still existing in other parts of the camp.* And that the exemption was not owing to want of susceptibility was proved, at least in one instance; for the first of these corps suffered very severely on its march after leaving the station.† The 53d regiment were situated in an airy and rather high situation at Trichinopoly, when the disease appeared: they did not escape, but they were attacked the last. It first appeared at Masulipatam among convicts in a *bomb-proof* (a chamber like a cave in the ramparts), and was for some time confined to that chamber, before it appeared in the rest. *It was different from the other bomb-proofs, in being ill-ventilated, crowded, and extremely damp.* Throughout it furnished more cases than the others. Some further time elapsed before the disease spread to the free population. Other prisoners in a dry and commodious jail, at the same time, suffered much less.‡ Two parties of European recruits arriving at Madras, one is sent into bomb-proofs in the fort, and the other into barracks at the Mount, eight miles off. The *former* is attacked whilst the *latter* remains free, and on being also sent to the Mount has no more cases.§ A corps encamped on low ground in very rainy weather was severely visited; of thirteen sepoys taken ill, six died. After a few days they moved to a higher spot, and *only one more case occurs*, which appears on the march to the new ground. During an attack of the epidemic experienced in April, 1823, by the 69th regiment in quarters, at the suggestion of the surgeon, the wing of the corps in which the disease prevailed the most was encamped on a piece of high ground in the neighbourhood, and he reports that *not a case occurred in that camp.*|| Mr. Mitchell reports, on a re-appearance of the disease at Palamcotta, ' It commenced its ravages to the north-east of the fort, and spread pretty generally through the small, low, dirty, and close houses in every direction. The hospital escaped its influence, probably because it stood on high ground and was very open all round, for certainly none of the sick, though upwards of ninety, where attacked. Only one person about the hospital was attacked, and he was in the habit of absenting himself from it at night.'

Dr. Henderson relates, that he was encamped with a division of the army in Burmah, in 1825, on jungly ground, when the disease suddenly broke out in the camp, fifteen or twenty persons dying of it in one day. On the following day the camp was moved to a higher ground a mile and a half distant, *after which not a single case occurred.* The same officer observes a particular barrack room in Fort St. George being exceedingly obnoxious to cholera (on one occasion many cases appearing in it and none in the rest), which was attributed to its contiguity to the ditch of the fort, the men's privies, and an offensive drain.¶ Mr. Jameson gives various instances of high and dry cantonments and other spots suffering little or not at all, whilst the neighbouring cities were severely scourged, and many more of close, filthy, and crowded cities suffering severely, whilst others of the opposite description almost escaped. Thus it was with Agra and Muttra, two cities on the Jumna, only forty miles asunder. At the latter place, which was severely visited, the extensive cantonments in its neighbourhood remained unaffected upwards of three weeks, whilst the disease was prevailing in the city, and then it began in their most distant part, nearly two miles from the city, which was on low ground near the river, and progressively extended to the

* Report, p. 89.

§ P. 89, 37, 38.

† Annesley on Cholera, p. 215.

|| P. 1.

‡ P. 89.

¶ Searle on Cholera, p. 60.

other end of the line, which gradually ascended from the river. ‘ The Rajapootana force previously to the appearance of the disease was encamped on a ridge of sandy soil, sloping for a mile or two to a much lower tract. The grass was thicker to the left of the camp, where the declivity was too gentle to allow the water to flow off speedily. On this side of the line the disease broke out earlier, and was throughout more violent than in its right division. No cause could be assigned for this irregularity of action, except that in one part the tents were pitched higher, and were consequently drier than the other.’* 415.

Mr. Orton admits that these and innumerable other facts are somewhat adverse to the doctrine of contagion; but endeavours to get rid of them by supposing, that contagion might be *imported* into the localities above-mentioned. He is, however, candid enough to impress upon his readers, “ that it is not to contagion alone that we are to look for the origin of the epidemic; for, without contingent favourable circumstances, it (contagion) is perfectly harmless.”

We have dedicated so many of our pages to Mr. Orton’s work, that we must now be brief in further notices. In a chapter on susceptibility or predisposition, the following conclusions are come to, in the shape of propositions.

- “ **PROPOSITION XIV.** In every body of people there is a large proportion incapable of receiving the disease, though exposed to all its usual causes.
- XV.** Having undergone an attack of the disease confers a great degree of immunity, at least for a time, from its future attacks.
- XVI.** The indigent part of society, the old, the weakly or unhealthy, and the intemperate, are particularly liable to the disease.
- XVII.** The usual exciting causes of the disease are exposure to great heat, cold, or moisture, errors of diet, over-exertion, the depressing passions, and in general whatever tends to debilitate or disorder the frame.” 433.

These propositions, as usual, are elucidated by numerous facts and histories, drawn from the observations of the author and others. No possible doubt can be thrown on any of them—if we except the 15th, respecting the degree of immunity conferred on an individual by an attack of cholera. We have been led to form a lower estimate of this degree than our author; but we need not stop to discuss the point here. It appears that the Chinese take a very calm and philosophic view of cholera and other pestilential visitations. They observe that “ the pestilence knows its victims,” and that, in an over-populated country, it is not a curse but a blessing; for it deprives of life chiefly those to whom it is of least value—the wretched, the sickly, the aged, &c. and very commonly those who are of least use to the rest of society!

In the section which embraces a comparison of the epidemic cholera of India with that of Europe, there are some judicious remarks. The identity of the Asiatic and European cholera cannot now be denied. But it is clear that the proportion of cases in which fever follows the choleric symptoms, is much greater in Europe than in India—and this may well account for the greater cause which we have for suspecting a contagious character in the European disease. Fevers of all kinds are now generally acknowledged to be capable of taking on a contagious or infectious character, under circum-

stances of accumulated population, filth, and deficient ventilation. The fever of cholera may therefore, like that of dysentery, pneumonia and other diseases, assume the fearful and dangerous attribute which the above circumstances confer. Dr. Kier states that, of twenty cases of cholera, seven terminated in the cold stage, and thirteen in the hot stage. It is uncertain whether the fever springing from cholera be a low or typhoid affection, or the consequence of some topical inflammation set up during the choleric symptoms. Mr. Searle, it will be seen farther on, affirms that more or less fever succeeds most cases of cholera—a bilious remittent in hot climates, a typhoid fever in cold. Mr. Orton finally remarks:—“ although there is little hope of our island escaping a visit, sooner or later, of the disease; I agree with Dr. Johnson in anticipating no great extent of mischief from its prevalence.” We must now dedicate a page or two to Mr. Orton’s therapeutics.

TREATMENT.

The most important point of all is the early employment of remedies. Sydenham maintained that opium was our sheet-anchor in cholera, and our author confirms the opinion of the English sage. “ It is probable that a single dose of it alone, given at the very commencement of the disease, would be found, in a great majority of instances, to put an effectual check to its progress.” He warns us, however, against an exuberant exhibition of this valuable medicine. In its secondary effects—perhaps in its immediate effects, when given in very large doses, it is, Mr. O. thinks, productive of that oppression of the vital powers, which so strongly marks the intense degrees of the disease. Solid opium he prefers to the tincture, as being less liable to be rejected. Four grains appears to Mr. O. to be a proper quantity for the first dose. If favourable symptoms do not appear, a diminished dose may be repeated at intervals of three, four, or six hours. It is on the first dose, if early administered, of this invaluable medicine, that we are chiefly to depend. Injections of the tincture are also recommended.

“ It has been the general practice to combine the opium with scrupulous doses of calomel (a mode of treatment for which we are indebted to Dr. Johnson), and the best effects have been stated by many practitioners to result from that measure.” 305.

Others, however, have demurred to this practice, and the author himself does not give a decided opinion. “ A practitioner,” says he, “ for whose opinion I have the highest deference, and whose practice in the disease appears to have been more successful than any other which has come to my notice, has never given the calomel until after the favourable crisis.” Stimulants, as brandy, aromatic tinctures, camphor, and essential oils, are strongly indicated in this disease, when judiciously administered, in moderate quantities; but a too long perseverance in them must be highly dangerous, on account of the fever or inflammation which ensues.

“ Bleeding has been extensively practised in this disease on all the three establishments, and has received the highest encomiums. There is, however, reason to believe that the opinions of medical men are still divided as to its general propriety. My own experience and enquiries have been such as at once to impress me with a high opinion of its good effects, and to show the necessity of caution and discrimination in its employment; for though its effects have

been in general favourable, in some instances they have appeared the contrary." 306.

It requires some nerve, indeed, to attempt to abstract blood from a corpse-like body, where the pulse is scarcely to be felt, and the skin cold. But it is to be remembered that the sufferer lies in a state of asphyxia, or one very much resembling it, and that we abstract blood rather to set the congested mass in circulation, than to diminish the actual quantity existing in the vessels at the time—in the same way that we pour out a small quantity from a full bottle in order that we may be able to shake up the rest, and put it in motion. This was the idea that struck the Editor of this Journal twenty-seven years ago; and it is curious as well as gratifying that a hint then thrown out, should have led to the adoption of a practice throughout India and a great part of Europe. The Editor cannot resist the introduction of the following passage, since few of the writers on cholera have been inclined to acknowledge the sources from whence many important points of their practice have been derived.

" In justice to Dr. Johnson it is necessary to mention, that his invaluable work on Tropical Diseases (which is in the hands of almost every practitioner in India) appears to have led to the adoption of bleeding in this epidemic. And the merit which accrues to him from this suggestion is of no common kind; for, according to the unfortunate notions which have so long prevailed, it is probable that few persons would have ventured on a practice of this kind, in a disease whose principal characteristic is extreme debility, without some previous evidence of its propriety." 307.

This operation should invariably be performed in the horizontal posture, and care taken to prevent the patient rising afterwards. In fact it is advisable to preserve this posture throughout the disease.

The various means of exciting counter-irritation on the surface are amongst the most valuable and least objectionable remedies. Sinapisms are most generally used. Our author often rubbed the part intended to be blistered, with oil of turpentine and sand, previously to the application of the blister. The stomach, abdomen, and head are the usual parts to be counter-irritated. Speaking of the warm air-bath, Mr. Orton strangely supposes that it must be injurious by vitiating the air which the patient breathes. He does not seem to be aware that the patient's head is entirely free from the bath. We shall say more on this subject towards the close of the article. The thirst being excessive, and yet the ingurgitation of fluids being productive of vomiting, our author has usually allowed moderate quantities of infusion of ginger, which, with the addition of a little sugar and milk, forms an agreeable beverage, of a light stimulant kind. After the favourable crisis, purgatives are indispensable for preventing or removing the train of fatal sequelæ which so frequently attend the disease. They are found to produce copious discharges of vitiated bile and faeces. " Calomel, from its known powers in this way, is highly useful; but it appears advisable, in general, to avoid its full effect on the mouth." The great debility which necessarily follows, for a short time, seems to call for stimulants and nourishing diet; but these are dangerous remedies. Simple debility is seldom dangerous in this or in any other disease. The food therefore, should be light and unirritating. Change of air has a remarkably beneficial effect during convalescence from cholera. This is the

whole of the therapeutic portion of Mr. Orton's work—only about seven pages in a volume of nearly 500 pages.

In conclusion, we may remark that the first edition of the work, founded on personal observation, propounds an unequivocal and exclusive anti-contagion doctrine—while the supplement to that edition, constituting the second edition, shews our author converted by the reports of others, to the doctrine of contingent contagion. This fact, or rather this change, though it derogates not from Mr. Orton's candour or perhaps his judgment, will nevertheless diminish the weight of his authority. Had he formed his final creed from his own observations and reflections, during the period of his widest range of experience, it would have carried with it infinitely more force in the minds of others. But putting this aside, the work which we have just closed is perhaps the very best which we have on the subject of cholera—at least as far as varied and laborious research is concerned. Mr. Bell's is more concentrated—more original—and we believe equally useful.

[Mr. SEARLE.*]

V. This gentleman's larger work we reviewed in Volume XIII., p. 375, *et seq.* The present pamphlet was published in an imperfect state, while the author was at Warsaw, superintending a cholera hospital there, and is now re-published with additions and improvements. Mr. Searle's testimony, on all points, both of etiology and practice, is very important, since few men have seen more of the disease than himself, both in Asia and Europe. We must pass over his symptomatology and pathology, in order to give some notice of his present ideas respecting etiology and practice.

"The immediate cause of Cholera would appear to be of the same nature as that which ordinarily gives rise to fevers of the intermittent and typhoidal character: hence it attacks those more particularly who reside near to or frequent damp marshy situations, or respire an atmosphere otherwise contaminated by the exhalations arising from organized substances, vegetable or animal, in a state of decomposition: hence, too, it is, that filthy, low, unventilated situations are its most common habitats. To develop the disease, or to render the individual susceptible of its attack, it would appear, however, that a certain condition of system or predisposition must exist; else it would be of more general prevalence than we ordinarily find it; this I believe to consist principally in debility; hence the indifferently fed, the badly clothed, and comfortless poor, or those exposed to the inclemencies of the weather and vicissitudes of temperature, and particularly, when under exhaustion from the want of food and bodily fatigue, are the most frequent subjects of its attack. And on this account, troops while marching, are very liable to be affected. The causes enumerated I consider quite equal to the production of the disease; but, in the character of an influential agency, I am constrained to add, a peculiar condition or epidemic influence of atmosphere; seeing there are times in which it prevails to a considerable extent—over-stepping the boundary we have marked out and assigned to it by predisposition—and other times again, when the causes enumerated would appear to be in operation, without its production. This atmospheric agency or modifying cause I believe, however, to be, without attempting to define its nature, though

* Cholera, its Nature, Cause, and Treatment, &c. By Charles Searle, Esq. Octavo, pp. 51. Highley, November, 1831.

I think it probably dependent upon a negative condition or peculiar electrical state of the air (or earth influencing the air) in character one, simply of depressing influence ; which being superadded to the amount of causes which under ordinary circumstances are productive only of that degree of depression of system and cold stage of fever which, like the shock of cold water, eventually excites the system to the re-action of fever—is, from being thus multiplied in extent, analogous to extreme cold, productive of that overpowering depression whereby the energies of the system are rendered unequal to the development of the stage of excitement or febrile condition.” 8.

The indications of treatment which our author points out are these—“ the removal and superseding the action of a sedative poisonous agency upon the system, and the effects resulting therefrom.” It is easier, however, to lay down indications than to effect them by remedies. Those recommended by Mr. Searle are, external heat applied in the recumbent posture—an emetic, composed of a large table-spoonful of salt in a pint of hot water—bleeding from a small orifice, if there be pain or heaviness of the head, oppressed respiration, pain at the praecordia, severe spasms, and the pulse be moderately full. He recommends great caution in the employment of this measure, with careful attention to the effects resulting from it. The next step (using heat and friction) is the exhibition of 12 grains of calomel, with some cordial stimulant—and this dose to be repeated every hour or two, according to the urgency of the case. As the symptoms improve, the dose is to be diminished, but still to be continued, till bilious stools and the urinary secretion are restored, when a mild aperient may be combined with it. The brandy and water may be continued every quarter or half hour, till feverish excitement becomes developed, when the patient usually calls for cold drink, which may be accorded, in small quantities at a time. When the febrile re-action is fairly established, calomel and James’s powder are to be given, with the neutral salts to secure evacuations. Local inflammations are now apt to arise, and are to be carefully watched. Mr. S. strongly recommends, at this period, glysters of warm gruel and common salt, repeatedly thrown up. Large sinapisms to the epigastrum and abdomen are beneficial—cramps are relieved by heat and friction. If the patient is not seen in an early stage, and symptoms of collapse are setting in, our author advises 20 grains of calomel to be given, with some cordial drink, at once, and local inflammations to be met by local bleedings and counter-irritation.

In India, Mr. S. observes, cholera was generally based upon, or succeeded by, fever of a bilious inflammatory type—in Europe, of a low remittent or typhoidal character. In Europe, the choleric symptoms were less marked than in India, and the succeeding fever evinced less of simple re-action.

“ I have said remittent, though the first few days I have generally found it to be intermittent ; coming on daily at about the same hour, preceded by coldness of the extremities, quivering of the lip, and depression of the circulation : but from the excitement of inflammation, which but too frequently becomes developed in the organs previously congested, the intermissions become imperfect, and in consequence, it assumes a remittent; and, from the conjoint debility, a typhoidal form.” 32.

Almost all the cases in Poland, which were neglected or ill treated at the beginning lapsed into this form of fever. This is a strong proof that the choleric symptoms are only a stage or form of fever. The following passage is important.

" In reference to the foregoing, and in exhibition of the connexion that subsists between cholera, fever, and dysentery, I would add the notice of a milder species of the disease, which was, in the month of August, exceedingly prevalent at Warsaw, and where fever and dysentery are, I was informed, annually at the same season extremely common. The following is the best account I could collect from my patients of its insidious mode of attack. A sense of fulness at the praecordia, of languor and incapacity to exertion—mental or bodily, occasionally with giddiness or headache; the latter, however, was often attended with an obscure form of fever, and only felt at some particular hour of the day; a slimy coated, white, or furred tongue, and which appeared occasionally to be swollen, being indented along its edges by the teeth; or otherwise, an unusually clean, smooth, and red tongue; lips pallid, or of leaden hue; eyes often of a pearly appearance, and surrounded with a brown circle; the countenance sallow; appetite frequently but little impaired, though the digestion in general imperfect, evinced by flatulence and distention after a meal. Bowels at first constipated, succeeded, however, in general, by relaxation, and this when attended with inflammation, terminating not unfrequently in bloody muco-purulent evacuations, or, in other words, in dysentery.

The preceding symptoms, fluctuating with the weather and contingent circumstances, may continue two, three, or more weeks; the individual feeling that he is unwell, but not attaching any importance to his condition, till the depressing influence of the atmosphere, preceding or accompanying wet weather, or an attack of indigestion, succeeding to the use of some improper article of diet—as potatoes, cabbage, salad, or the like, or drinking too freely of some cold fluid, or fatigue, or exposure to the sun, or cold—develops the attack of cholera, coming on by purging, or vomiting, succeeded by cramps in the legs, lividity of countenance, cold skin, and feeble pulse:—a condition from which, if the patient recovers, is almost invariably succeeded by fever, of an intermitting or remitting type, coming on daily or oftener, and generally unpreceded by any very marked cold stage, further than a sense of shuddering, tremor, or quivering of the lip, and depression of the circulation. An attack of this kind, it must be obvious, is nothing more than one of fever, based upon torpor of function, and congestion of the liver and chylo-poietic organs: and attributable to the continued respiration of an impure atmosphere of a milder degree than ordinarily gives rise to Cholera, such as results from the imperfect ventilation of the town, and foul state of the drains: or in persons otherwise situated, from some swamp or filth in the neighbourhood of their abodes." 36.

It is pretty evident, from the accounts from Sunderland, that diarrhoea and dysenteric affections prevailed to a great extent, and we have little doubt that the "malignant cholera" was merely the worst forms of the above diseases, aggravated by an epidemic influence. In the mild premonitory forms of cholera, Mr. S. recommends, after an emetic, a couple of grains of calomel every night, with an occasional mild aperient—keeping to bed, and using diluents. When the evacuations have become healthy, in attacks of cholera, Mr. S. recommends the sulphate of quinine, to prevent or mitigate the subsequent fever. Several interesting cases, and much useful detail of treatment, are contained in this pamphlet, which will no doubt have an extensive circulation.

[Dr. LEFEVRE.*]

VI. Dr. Lefevre was appointed, in conjunction with several of his col-

* Observations on the Nature and Treatment of the Cholera Morbus, now prevailing epidemically in St. Petersburg. By George W. Lefevre, M.D. Physician to the British Embassy at St. Petersburg. Svo. pp. 96. Nov. 1831.

leagues, to superintend a large, though not very populous district, during the prevalence of the late epidemic in St. Petersburg; and he also did duty in rotation at one of the largest of the temporary hospitals. He had therefore ample opportunities of seeing the disease, of ascertaining the best methods of treatment, and of observing its mode of propagation.

In respect to the contagious character of the disease, Dr. L. prudently declines giving a positive opinion till he has further experience. "As regards the present epidemic," says he, "such as I have lately witnessed it, I am bound to say that I have no rational grounds for believing it to be contagious." In its progress, says our author, from Tiflis to Moscow, it was observed "to move in a zig-zag direction, rather than in a regular line of march. It would pass by a town which lay immediately in its path, to appear in another, which it must have reached by a circuitous route." This is what is called by the ultra-contagionists, *travelling* regularly along the great roads and rivers!

"When it invaded a town, it followed the same law; touching at a point to fly off at a tangent, and appear at a widely separated part from that where it first commenced, leaving the intermediate spaces uncontaminated.

Such was observed to be its character when it reached St. Petersburg, where it was first announced officially on the 14th of June, as having appeared in the suburbs.

A few days sufficed for its dissemination over the capital; and this so widely and so generally, as in most cases to preclude all idea of mere connexion with infected persons being the sole cause of its propagation.

I was myself called to see a case upon the third day of its appearance. The patient resided upon the English Quay, a distance of at least three English miles from the place where it first appeared. She was an old woman of sixty-seven years, who scarcely ever left her room; she attributed her attack to indigestion, and died in less than twenty-four hours with all the symptoms of inveterate Cholera." 3.

During the Autumn of 1830, St. Petersburg was "surrounded on all sides by the cholera," but still it escaped during the Winter and succeeding Spring. Seven months elapsed since the disease was in the immediate vicinity, and the imperial city began to think itself insusceptible of the poison. People resumed their usual avocations and ordinary diet—regretted the privations they had undergone—resumed the use of fruits and vegetables which had hitherto been thrown into the streets—and even laid aside the fumigations of tar and chlorides, juniper and tobacco. The family receipt-book was laid aside, and Buchan and Thomas were replaced by fairy tales and travels in the East. Castor oil and opium fell to the usual price, and chemists and druggists were the only people with long faces in the joyous St. Petersburg.

In the midst of this oblivion of danger, the hydra-headed monster was *en route*, and the journals announced his awful advent.

"The friends to the doctrine of contagion saw immediately the full proofs of their belief realized, because they found the disease imported by a bargeman, in an infected barge, and from an infected station. Nothing could be more evident, nothing more conclusive.

Those of a contrary opinion disputed the point, and with some degree of plausibility. *If the disease had been so imported, why did not the man fall ill before his arrival at St. Petersburg?*

How was it that none of his companions, exposed to the same causes, should have been attacked also?

When, upon inquiry, it was found that within the space of three days the disease broke out in a dozen parts of the town widely separated from each other, the supporters of contagion awaited further evidence, and the anticontagionists increased with the increase of the disease.” 7.

How exactly does the invasion of St. Petersburg correspond with the invasion of Sunderland! A bargeman in health, and with a healthy barge-crew brings the cholera to the capital of Russia—a merchant vessel, with a crew in perfect health, and not one of which crew ever had cholera, sails up the river Wear, and—in the course of a few weeks, communicates cholera to the dirty lanes of Sunderland! Oh, this admirable *post hoc ergo propter hoc!*

From the dread of contagion, says our author, “many deserted their posts in the hour of danger, fled from the city in the day of her trouble, and shut their doors to all who had communication with her.” Contrast these blessed effects of the doctrine of contagion with the following facts.

“I am personally acquainted with a nobleman, who, upon hearing of the Cholera having reached Petersburg, left his country seat at a long distance from the capital, hurried up to town, and was to be found from morning till night acting the good Samaritan, with as pure and disinterested intentions as his prototype of old.

It is true he was a non-contagionist, and feared not infection, and this confidence adds much weight to the advantages of the doctrine, inasmuch as it stimulates the opulent to exert themselves upon such occasions with proper philanthropic feelings.” 8.

We must pass over the symptomatology of the disease. Little mention is made of the peculiar urinous odour which some have perceived issuing from cholera patients. Indeed we are informed by Dr. Hamett, that this symptom was comparatively rare. Dr. Lefevre avers that during the epidemic in St. Petersburg, a general indisposition prevailed throughout the population.

Of all predisposing causes “moral affections were found to be the most frequent, and their baneful effects were not merely confined to rendering their victims more susceptible of the malady, but they produced a decidedly fatal influence on the constitution itself.” Many died of pure fright in St. Petersburg, and we have no doubt that hundreds will die of cholera-phobia in London, should the disease invade us with much virulence. The following facts are worth a bushel of arguments.

“As far as my practice is concerned, both in the quarter allotted me, and also in private houses in different parts of the town, I have no proof whatever that the disease is contagious.

The first patient I saw was upon the third day of the epidemic, and upon strict inquiry I could not trace the least connexion between the patient, or those who were about her person, with that part of the town where it first appeared, a distance of several versts.

As regards the attendants of the sick, in no one instance have I found them affected by the disease, though in many cases they paid the most assiduous attention, watched day and night by the beds of the affected, and administered to all their wants.

I knew four sisters watch anxiously over a fifth severely attacked with Cholera, and yet receive no injury from their care.

In one case I attended a carpenter in a large room where there were at least thirty other men, who all slept on the floor among the shavings ; and though it was a severe and fatal case, no other instance occurred among his companions.

In private practice among those in easy circumstances, I have known the wife attend the husband, the husband the wife, parents their children, children their parents ; and in fatal cases, where from long attendance and anxiety of mind we might conceive the influence of predisposition to operate, in no instance have I found the disease communicated to the attendants.

As for many reports which have been circulated, and which *prima facie* seem to militate against the statement, I have endeavoured to pay the most impartial attention to them ; but I have never found upon thorough investigation that their correctness could be relied upon, and in many instances I have ascertained them to be designedly false ; so that as far as proof can be drawn from my own limited experience, I have none to offer in favour of Contagion." 34.

In respect to diagnosis, our author justly remarks that it is utterly impossible to determine the nature of the complaint till the symptoms are at their height—"when once the cholera physiognomy is present, a child would be able to recognize it." The watery nature of the stools is one of the least equivocal symptoms of cholera at the beginning of the disease. The mortality pretty nearly averaged one-half of the cases. In the beginning of the epidemic the medical practitioners lost eight-tenths of their patients. In the decline of the epidemic, a similar proportion was saved. Various remedies were extolled as specifics ; but soon found to be often ineffectual. Venesection was, at one time, ordered to be employed by *Government* ! Then sweating was praised, and various ingenious contrivances were brought forth for the purpose of raising that process. "Of internal remedies, calomel and opium were most in repute." But this was far from successful. Rhubarb and magnesia superseded calomel and opium, and was, in its turn, renounced for sub-nitrate of bismuth. This was believed to be almost a specific; but the accounts given of its effects by various practitioners would excite laughter, were it not that the subject is too melancholy. The following is the conclusion to which Dr. Lefevre has come in respect to remedies. "The epidemic cholera, upon its first invasion, baffles all attempts to conquer it; but it gradually loses its intensity, and, towards its decline, becomes as tractable as other disorders of the alimentary canal." Hot baths at first were almost universal, but soon fell into disuse, and proved actually prejudicial, on account of the fatigue experienced by getting in and out of them. Frictions with hot cloths, or bags of hot sand, were found to be the best substitutes. The horizontal position is desirable throughout the whole period of the disease. The vapour-bath was, upon the whole, beneficial. "In the present epidemic bleeding has been decidedly beneficial, if employed judiciously."

"Bleeding from the arm in the first stage, when the pulse is full and the temperature not reduced, is often sufficient to cut short the disease. The quantity of blood to be drawn should be but small ; eight ounces will be sufficient to allow the remainder to circulate more freely and relieve the heart, and this will not too much exhaust the patient.

The blood is generally thicker than usual, highly carbonized, and forms a loose coagulum. I do not know if the blood of Cholera patients has been analyzed during the present epidemic. The patient usually feels immediate relief, particularly where the head has been much affected. He should be bled in the horizontal posture, and remain quiet for some time afterwards. The operation of medicines is generally much facilitated by a small bleeding.

The absence of the pulse is no prohibition to the use of the lancet, unless this is accompanied by other symptoms of great debility, and the system has been exhausted by previous evacuations, and the surface is covered with a cold clammy sweat; in such instances I have never seen blood-letting serviceable, though many assert the contrary. In some cases the pulse ceases to beat very early, but upon opening a vein the blood flows slowly at first, gradually the current becomes fuller and stronger, the pulse beats very sensibly, and the heart thus relieved is enabled to continue the circulation." 57.

Dr. Lefevre makes some judicious remarks on the different remedies, internal and external, which require no particular notice. It appears that many of the poor people, believing themselves to be poisoned, took large quantities of milk and oil, which acted as emetics, and it is said that many of them recovered under this domestic treatment. When emetics were employed by the faculty, they were not so beneficial, in consequence of their being taken at a much later period of the complaint—and probably, also, from the patients not having any confidence in the remedy. The truth is, that at the onset of the disease, and, consequently, when it was most fatal, no remedy could boast of much success. When the violence of the epidemic was subsiding, then remedies acquired fame to which they were not entitled. Upon the whole the subnitrate of bismuth was considered a valuable medicine, though far from being a specific. The following was Dr. Lefevre's own mode of practice, when called in at an early period of the disease.

" If the patient is robust, the pulse still perceptible, and the system not too much reduced by evacuations, I order from six to eight ounces of blood to be drawn from the arm, the patient being first put to bed, in the recumbent posture.

The following draught is then to be given :

Laudanum and aether, of each twenty-five drops. Strong peppermint water, an ounce and half.

If this be rejected, it should be repeated immediately; if the second be likewise not retained, then a clyster of linseed tea with fifty drops of laudanum should be administered.

It often happens that the patient after taking the first dose falls asleep, and wakes in perfect health.

A large sinapis to the abdomen, and bottles of hot water to the feet, should not be omitted; if these means produce speedy relief, an ounce of castor oil should be prescribed as soon as the stomach and bowels are quiet." 80.

Such was the most successful practice in slight cases, and Dr. L. thinks that, by it, many of the severer forms have been warded off. But we have overstepped our limits, and must take leave of Dr. Lefevre. We are anxious to glean practical matter from the writings of those who have actually witnessed the disease, rather than polemical discussions from library practitioners and fireside travellers, who have never " set squadron in the field."

[Dr. H. YOUNG.*]

VII. As it has been our object, in this extended article, to take notice

* Remarks on the Cholera Morbus, &c. By H. Young, M.D. Octavo, pp. 78. November, 1831.

only of a few of the more important and practical works on cholera, rather than crowd our pages with a galaxy of authorities, few of them of any real utility, so we must not pass over the unostentatious but valuable little pamphlet of Dr. H. Young.

The author had extensive experience of cholera in India, and transmitted the substance of this Essay to St. Petersburg in the early part of the present year. In his retirement after the fatigues and dangers of Indian service, the author would have remained silent on the subject of cholera;—

“ Were it not that he dissents from the opinions promulgated by the Board of Health, as to the contagious nature of the disease—opinions which, if acted on, may, by giving rise to unfounded, or, at least, exaggerated alarm on this point, occasion the defection of friends and relatives, at a moment when their kind offices are of the utmost importance to the comfort of the patient, and when the absence of such affectionate attentions, by producing depression of mind, would materially diminish the chances of recovery.”—*Preface*, vii.

It is now hardly necessary to state, that the Board that gave issue to the first code of health no longer exists, and that a new Board, convinced by their own reason, or warned by the public voice, has promulgated doctrines more in accordance with humanity and with modern knowledge. We shall be able to make room for only two or three extracts from this valuable little pamphlet, on account of our narrowing limits.

“ It is a singular fact, that, throughout the whole of its progress, there was always a tendency shown by the disease to spread from east to west. It was natural, therefore, to look for some explanation of this phenomenon in the prevailing course of the winds at that period; and it so happened, that, in a great majority of instances, and in almost every situation, it was found that the wind was blowing either from the east, or east by south, at the time of the breaking out of the Cholera; and it was also observed, that the course of the winds had a very marked and decided effect on the violence and progress of the disease; for, while it raged with peculiar activity during the prevalence of an easterly wind, it was frequently observed considerably to decline, and, in some instances, almost to disappear, on the setting in of a northern or western one.” 47.

“ There was a marked disposition in the Cholera to follow the course of rivers, and this circumstance may, perhaps, be explained on two different grounds; first, it is to be recollectcd, that, in general, the rivers in India flow through a low and level country, subject to periodical inundations, and to copious depositions of mud and slime, on which a tropical sun acts powerfully the whole day. Hence, in all probability, they must prove the fertile source of miasm. In short, all the circumstances that predispose to the reception of the Epidemic are, probably, to be found in their neighbourhood. Secondly, the banks of the Ganges, and other sacred streams in India, are crowded with towns and villages, giving rise, throughout their whole course, to a dense population; and, as many sacred spots on their banks are, besides, resorted to by pilgrims from every part of India for devotional purposes, these circumstances may very readily account for the disease arising, and again and again re-appearing, in the course of large rivers. It is, at the same time, difficult to account for a circumstance which was in many cases very observable, *viz.* that the Epidemic would occasionally commit its most dreadful ravages on one side of a river, or even of a narrow stream, and leave untouched the opposite bank, although both were apparently placed under precisely the same circumstances; and then, after travelling a longer or a shorter course, it would return and exert all its baneful power on the places which it had before so unaccountably spared. Then, perhaps, after subsiding or disappearing altogether, it would, sometimes, without any as-

signable cause, return to a place it had before visited, and again commit the most deadly havoc.

That the severe visitation of the disease, in the course of rivers and among a dense population, may be explained by the causes above noticed, is rendered further probable by the same phenomena having occurred under the author's own observation, in the city of Calcutta and the adjacent villages. Many of the latter are placed in low, swampy situations, and, at that period, also, many of the most crowded parts of the city were very imperfectly drained. There were, likewise, in the lowest and most thickly inhabited quarters, many pools and ditches of stagnant and filthy water, on the margins of which it was the custom of the natives to sleep during the hot and sultry nights. In such situations the Cholera raged with double and dreadful fury, while the drier, better drained, and more thinly inhabited parts of the town, suffered, comparatively, very little." 50.

Upon the whole, Dr. Young concludes that the cholera owes not its existence to particular states of the atmosphere, but to a peculiar and active poison, engendered we know not how. But, however generated, Dr. Young thinks that the virulent matter is conveyed from place to place by certain currents of air, particularly by easterly winds. The following extract will shew our author's ideas respecting the contagion of cholera.

" In the first place, according to the Bengal Official Report, this disease arose in many different places at one and the same time, and within a very few days it was raging in the unconnected and far-distant districts of Behar and Dacca. Now it is by no means probable, but, on the contrary, against all experience, that it should have been communicated from place to place in the space of a few days only, through the many hundred miles that intervene between these districts; for the result of a number of observations shows, that in its progress from one place to another in any particular course, as, for instance, the course of a large river, its average rate of travelling, as marked by the successive periods at which places were affected, did not exceed five miles a day, and was very often still slower.

It differed from small-pox, plague, and other contagious diseases, in this, that, whenever it broke out in a town, camp, or cantonment, instead of daily increasing, and being perpetuated by the very means on which it fed, it invariably ran, within a given time, a regular course of increase, maturity, decay, and extinction. This peculiarity the author witnessed in the instance of the city of Calcutta, where the Epidemic broke out in the month of August, 1817, increased in strength and virulence during the months of September and October, began to subside from the beginning of November, and had almost disappeared by the end of January, 1818.

But, what happened in many other situations occurred here also; for, after an interval of about three weeks or a month, the disease re-appeared with more than its pristine violence, and again ran through the same course of increase, decrease, and decay. Now, as the author of the Bengal Report very justly observes, this uniformity of rise and declension appears to be quite inexplicable upon the supposition of contagion; for if the virus were capable of reproduction, through the medium of effluvia, or the secretions of individuals already infected, it must have gone on augmenting, until it either had no longer subjects upon whom to exercise itself, or was stayed by some powerful counteracting means, such as uncongenial seasons, or segregation, and the other prophylactic expedients usually resorted to on such occasions. This, at least, is the course commonly pursued by the plague and other contagious diseases. When once these are unfortunately introduced into a city or tract of country, they not only for a time remain prevalent in it, but go on daily increasing and perpetuating themselves by fresh accessions of infectious matter, until they either have depo-

pulated the place, or are checked by some of the circumstances mentioned above. If the form and progress of the Epidemic Cholera had suggested the expediency of similar safeguards, they would, no doubt, have been proposed and acted on wherever it appeared. But, excepting the step wisely adopted in some of the camps in which the disease largely prevailed, of moving from the vicinity of the dead in quest of higher ground, and of a purer atmosphere, (a step which could have placed no check upon contagion, as most of the sick, and all the infected baggage accompanied the main body,) no means of security whatever of that sort, seem in any case to have been thought of: the truth is, that all men were convinced that they were wholly unnecessary.*” 55.

We are aware that it is next to useless to state that the Board of Health, where the epidemic first appeared, acknowledged that cholera broke out simultaneously in various and far apart places in Bengal. It commenced, say the Ultras, in the city of JESSORE, and from that point it radiated, as it did from the barques on the Wolga, to every point of the compass, by personal contagion! The following passage will be read with interest by impartial men; while the ultra or exclusive contagionists will tear it up and throw it into the fire.

“On the morning of the 11th of May, 1818, a detachment of ninety men of the first battalion of the 26th native infantry, marched from an inferior post to join the main body of troops then encamped at Saugor. After an ordinary march it halted, in perfect health, half way, under shelter of a few trees, on the banks of a small lake, situated in the midst of an open space about three miles in circuit, and surrounded by low, woody hills. The whole remained well till the fall of night, when Cholera broke out amongst them. The first man was taken ill at midnight, and died in half an hour. Several others fell sick within the next few hours; and, before sun-rise, twenty out of the ninety were overtaken by the disease. Although the Saugor camp was distant only five or six miles, yet the detachment was too weak to move without assistance. The sick of the sepoy and followers were therefore carried in carts and doolies or litters, sent from the main body; but before eleven, a. m. when they got to their ground, five were already dead, and two others moribund. Next morning a man of the same party was seized in the act of scouring his accoutrements, immediately became insensible, and expired in a few minutes. During the three succeeding days several others were taken ill, and before the end of the week, of the whole detachment there was not a single man that was not sent to the hospital labouring under Cholera. The men of this party *mixed promiscuously and unreservedly with those of the Saugor camp, and yet, of the latter, not one individual got the disease.*” 57.

Of a medical list, in Bengal, amounting to nearly 300 individuals, most of whom had to attend the disease on a very extensive scale, only three caught cholera, and only one died.† Anxious, from long experience, to mitigate the sufferings of those who are affected with this terrible scourge—remembering “that amongst the symptoms of the disease, was a remarkably acute sensibility of the mind, which, for the most part, continued to the very last moment of existence—and that the patient was, throughout, peculiarly susceptible of painful mental impressions”—the author feels that he should be wanting in his duty to the public, did he not “state his decided opinion of the non-contagious nature of the spasmodic cholera,” and to endeavour to avert from the unfortunate sufferers the great calamity which would result

* “Bengal Report, page 127, et seq.” † Bengal Report, p. 129.

from the adoption of the measures propounded by the first Board of Health in this country, viz :—

“ ‘The immediate separation of the uninfeeted from the sick,’ by their ‘prompt removal from the house of any infected person, or by the removal of any individual affected with the disease; or, in the event of such removal not being practicable, the prevention of all intercourse with the sick, even of the family of the person attacked.’ ”*

Dr. Young’s fears on this subject are now at an end. We shall neither be torn from our suffering friends—nor shall the afflicted members of our families be dragged to a lazaretto, to die of anguish rather than of the disease! Dr. Young’s prophylactic measures are judicious, and his modes of treatment are active and efficacious. The grand measure is to restore the balance of the circulation, by external heat and friction, conjointly with diffusible stimuli internally. When the cold state is a little on the decline he recommends, from ample experience, large doses of calomel and opium. Bleeding did not succeed under his management.

We recommend Dr. Young’s pamphlet to the attention of our brethren.

VIII. MISCELLANEOUS WORKS ON CHOLERA.

It cannot be expected that we can give an account of the various works, of all sizes and shapes, that have been written on cholera, even since the date of our last number. We regret that Dr. KENNEDY’s Notes on Cholera escaped us till too late to be embodied in this article. Dr. K. likens the proximate cause of cholera to CONCUSSION OF THE BRAIN—or rather he believes “that the collapse in cholera is induced by CONCUSSION OF THE BRAIN produced by some unknown cause, and that the purging and vomiting are sanitary processes.” Dr. K. attributes the original cause of the disease to some peculiar state of earth or air, or both, and believes that planetary influence has a great share in the production of this cause. He strongly recommends venesection.

Dr. ALLEN, in his volume on Insanity has dedicated a considerable space to the subject of cholera. He is of opinion “that in all epidemics we have striking proofs of some noxious agency emanating from our globe, and which obeys some order of operation yet undiscovered—that it travels for the most part, with the sun, and its march appears subject to the same order of operation as that of magnetism :—that it will, like a thunderstorm or the whirlwind, march in some given line, often against prevailing winds ; and, out of that line, we escape its baneful influence.” This poison, which he believes to emanate from the earth, is received through the medium of the lungs, and from the lungs, passes to the brain, where it poisons the springs of life.

BARON LARREY has contributed his mite to the elucidation and treatment of cholera. His Essay is well translated by Mr. H. Patterson, of Dublin. The Baron has some curious notions respecting the nature and origin of this disease. He thinks it “consists in an aberration of the bile, and of the sero-albuminous portion of the blood. These fluids accumulated in the intestines, injure by their quantity, and above all by their stimulating quality. This irritation once established, upon the tunics of these organs, they almost immediately experience a spasmodic or nervous contraction, which is instantly followed by an antiperistaltic movement, &c.” When the disease is epidemic, “it is the result of

* “Report of the Board of Health, p. 36.”

the pernicious action of sudden transition from great heat to a low and moist temperature." "To this may be added at the same time, a greater or less mass of mephitic effluvia arising after stormy rains, from soil where putrid animal matters have lain, such as burying-grounds, dried marshes and stagnant water; and should hot winds afterwards arise and blow in the direction of habitations, the evil is aggravated and spreads rapidly." Such is the etiology of Baron Larrey. It is curious that he states the occasional existence of *exanthemata* in the third stage of the Indian cholera, and "this is the time when contagion may take place." We have heard, on good authority that eruptions on the skin, of a very remarkable kind, appeared in some cases of cholera along the shores of the Baltic. There is here given an extract of a letter from Dr. Vivier, one of the most talented physicians who went to Poland to investigate the cholera. "Whatever contagionist-physicians have said, nothing is less demonstrated, in cholera, than the property of propagating itself by mediate or immediate contact with the patients." We need not advert to the mode of treatment recommended by the venerable Baron.

DR. GRANVILLE has sent forth a clever little volume, under the quaint title of "the Catechism of Health," a considerable portion of which is dedicated to the subject of cholera. In this portion he has applied "caustic to our counsels," and handled the first Board of Health very sharply. Dr. G. is a decided anti-contagionist, and has brought forward some curious facts not generally known in this country. We shall allude to one or two of these. In 1821, an expedition sailed from Trieste, under Baron Schimellpenning, for the purpose of circumnavigating the globe. A spontaneous cholera broke out in the squadron, when it arrived in the hot latitudes, and destroyed nearly the whole of the crew. In the year 1600, cholera, in its worst form, made the tour of Europe, and destroyed a large proportion of those who were attacked. Dr. Granville proposes the use of a stimulating liniment externally, and of "alkaline drops" internally. We regret exceedingly that this talented physician should not have publicly stated the composition of these in his work, instead of referring the purchasers to Mr. Garden, in Oxford Street. How are people in Scotland, Ireland, or country-towns of England to avail themselves of these remedies? Dr. G. cannot, we are sure, intend to keep them a secret.

DR. FERGUSSON, Inspector of Hospitals, and who has written so much and so well on malarious fevers and the nature and origin of malaria itself, has published two letters in the WINDSOR EXPRESS, (Nov. 12th and Nov. 26th,) which are extremely important. We regret exceedingly that we cannot republish them in this article, on account of the length to which the article has already extended. His letters are full of practical facts, and his conclusions are those of a man who has seen and studied the subject on the widest scale. We shall probably make use of his letters in our next number. We can only make room for a short extract here.

"There is an old term, as old as the good old English physician, Sydenham, *constitution of the atmosphere*—and to what else than to some inscrutable condition of the element in which we live, and breathe, and have our being—in fact to an atmospheric poison, beyond our ken, can we ascribe the terrific gambols of such a destroyer. 'Tis on record, that when our armies were serving in the pestilential districts in India, hundreds, without any noticeable warning, would be taken ill in the course of a single night, and thousands in the course of a few days, in one wing of the army, while the other wing, upon different ground, and consequently under a different current of atmosphere, although in the course of the regular necessary communication between troops in the field, would remain perfectly free from the disease. It would then cease as suddenly and unaccountably as it began,—attacking, weeks after, the previously unscathed division of the army, or not attacking it at all at the time, yet returning at a

distant interval, when all traces of the former epidemic had ceased, and committing the same devastation. Now, will any man, not utterly blinded by prejudice, candidly reviewing these facts, pretend to say, that this could be a personal contagion, cognizable by, and amenable to, any of the known or even supposable laws of infection—that the hundreds of the night infected one another, or that the thousands of the few days owed their disease to personal communication,—as well affect to believe that the African Simoon, which prostrates the caravan and leaves the bones of the traveller to whiten in the sandy desert, could be a visitation of imported pestilence.

That the seeds of his fury have long been sown amongst us may be proved, and will be proved ere long by reference to fatal cases of unwanted Cholera Morbus appearing occasionally during the last six months in London, Port Glasgow, Abingdon, Hull, and many other places, which as it did not spread, have been passed unheeded by our health conservators; but, had the poison then been sufficiently matured to give it epidemic current, would have been blazed forth as imported pestilence. Some one or other of the ships constantly arriving from the north of Europe could easily have been fixed upon as acting the part of Pandora's box, and smugglers from her, dispatched instanter, to carry the disease into the inland quarters of the kingdom. I write in this manner, not from petulance, but from the analogy of the yellow fever, where this very game, I am now describing has so often been played with success in the south of Europe; and will be played off again, so long as lucrative boards of health and gainful quarantine establishments, with extensive influence and patronage, shall continue to be resorted to for protection against a non-existent—an impossible contagion."

We ought not to pass over an ingenious Essay by Dr. FORSTER, who has written largely on Atmospheric Diseases, and has recently published a pamphlet on the Epidemic Cholera. We can only briefly allude to this brochure. Dr. F. maintains that epidemics are the offspring of "an unhealthy state of the prevailing air"—that, during this state of the atmosphere, certain tribes of reptiles and insects overspread and desolate large tracts of countries—that terrestrial commotions, evinced by volcanos, &c. are now taking place in an unusual degree—that the epidemics resulting from, or accompanying these terrestrial commotions, are wholly inexplicable—that they pursue a course wholly incapable of being arrested by any sanitary regulations—but that, as large cities are more frequently attacked than small country places, so the *infectious* power of the air, being there augmented by the exhalations from the bodies of patients, those who come into close proximity or contact with them, are most likely to take the disorder—this circumstance giving rise to the idea of *CONTAGION*, while it ought to point to ventilation and cleanness. Dr. F.'s pamphlet, like all his other writings, evinces great research. He has been unfairly attacked by one of his townsmen.

Mr. PETTIGREW, a talented surgeon, has written a popular pamphlet on the subject of cholera, which is well adapted to the object which the author had in view. His descriptions are clear—his means of cure judicious. He is evidently a non-contagionist.

Many clever papers have appeared in the public journals from anonymous correspondents—the best, perhaps, of these bears the signatures of ALPHA, and also of OMEGA. They both carry intrinsic evidence of being the offspring of the same individual. The article Cholera in the WESTMINSTER REVIEW is, we think, the fairest and most impartial of all those which have emanated from the advocates of contagion. Dr. Copland's article in the FOREIGN QUARTERLY is erudite and clever, but the ardour with which he advocates the cause of contagion, and the peculiarity of some of his views, detract something from the merit of his compilation.

Mr. Bell's letter to Sir Henry Halford is one of the most forcible and argumentative pamphlets which have appeared on the subject. Its chief object, however, being to annul the sanitary code issued by the first Board of Health, and that object being attained by the issue of a different code, a great portion of the pamphlet is now become comparatively uninteresting. Nevertheless we shall close this long article with a few excerptæ from Mr. Bell's Letter.

"First, then, I ask, what has our European experience of Cholera taught us? The general body of Indian practitioners had long been accustomed to regard the disease as non-contagious. But as it advanced into Europe, the eminent physicians in the several countries which it has successively ravaged, disregarded the Indian experience; and, perhaps wisely, resolved to protect themselves against its approaches by rigorous quarantine regulations, or by sanitary cordon, enforced with all the power of despotic governments. Look, however, at the result:—In the face of all such regulations the disease has advanced westward with undeviating and irresistible strides; and, so far from the experience of Europe refuting the Indian conclusions on the question of contagion, it would appear, that, as each country becomes acquainted with the disease, the conviction becomes general, that to whatever cause its dissemination is to be ascribed, it is not propagated by contugion, and cannot be confined within any prescribed limits."

"The experience of India, of Russia, and more lately of Germany, proves that Cholera travels not with the erratic course of a contagious distemper, but with a march steadily progressive in a particular direction. The absence of quarantine in India did not accelerate its progress; the enforcement of such regulations in Europe has *in no instance* retarded it. Nay more, it is well known that new cases of the disease do not occur in vessels after they have got fairly free of the port where it prevails: and in the thousands of vessels which have performed quarantine on our shores, no well authenticated case of the disease has been reported."

"A Cholera patient requires not only the almost constant attendance of a medical practitioner, but his life, in most cases, depends on the unremitting efforts of non-medical assistants. In India, we see the patient's ordinary acquaintance, free from all alarm, actively engaged in shampooing or rubbing spasmodically affected limbs; while the medical attendant in that country has always the aid of any number of volunteers he may require. But under the influence of your regulations, where are we to look for such coadjutors? It is impossible for an unprofessional person to read the directions lately published in the Gazette, without being impressed with the belief, that, if he touch a patient labouring under Cholera, he does little less than inoculate himself with a mortal poison. The Board themselves, indeed, are already, I much fear, paving the way for inefficiency in hospital establishments; for, by one of the published heads of instruction, the hospital establishments are directed to be *kept low*, that the number of attendants may not tend to spread the disease."

"In India, generally speaking, one in eight of the persons attacked dies: in Europe, with all the advantages of superior medical skill, the deaths, if newspaper reports are to be credited, have been nearly in the proportion of one to two; and my persuasion is, that this extraordinary mortality is to be attributed, in no inconsiderable degree, to rigorous sanitary regulations; which, while they have in no respect arrested the progress of the disease, have increased its evils, both by their direct operation and by the causeless and enervating panic which they have been so powerful a means of promoting." 7.

In an appendix to this article, we shall make some observations on the cholera as it has appeared in England; and hope, on the whole, that our analyses and extracts, in this Number, will be found to embody a valuable mass of facts and observations on the important subject under consideration.

(To be continued in the Periscope.)

Periscope ;

OR,

CIRCUMSPECTIVE REVIEW.

"Ore trahit quodcunque potest, atque addit acervo."

I.

ON PHLEGMONOUS TUMOURS IN THE
RIGHT ILIAC FOSSA. By Mr. J. M.
FERRALL, Surgeon to the Maison de
Santé, &c.

OUR readers are aware that we have taken due notice, in different parts of this journal, of the above subject, especially as treated of by Messrs. Duppuytren, Dance, and others. It appears that M. Ferrall had collected materials for a long paper on this complaint, before the memoirs of the French authors appeared; but now considers the publication of them unnecessary. Subsequent experience, however, has thrown some light on phenomena before involved in obscurity—and having seen the complaint occasionally take a course somewhat different from that generally described, and having reason to believe that it has its origin in other causes than those to which it has been ascribed, he has selected those cases in his possession which appear to illustrate a portion of the history of the disease, of which no evidence has hitherto been adduced.

It is the chronic form of this affection which is most likely to be overlooked in practice. The attendant sickness is so like that occasioned by a capricious or dyspeptic stomach—the pain so resembles that from flatulence—that days and weeks of uneasiness are allowed to elapse before efficient steps are taken.

"Pain, more or less acute, referred to the right iliac region, is the symptom which generally urges the patient to seek advice. This leads to a careful examination of the parts; and if we

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find there a deep-seated immovable tumour, extremely painful to the touch, we have the leading character of the complaint. The history of the case, with the position and feelings of the patient, and the state of the limb, will assist us to distinguish it from the commencement of abscess in the psoas or iliacus muscles, or in the abdominal parietes. On this it is necessary to dwell more particularly when describing the cases to which they bear the strongest resemblance.

When the evidence opposes this view, and we refer the phenomena to the cœcum, we have still to consider how far the tumour may be constituted by impacted fecal matters alone,—how much of its bulk may consist of phlegmonous deposits external to the gut;—and whether the neighbouring peritoneum be involved to any material extent. The condition of the lining membrane of the cœcum should also be considered, for it will appear that the tumour may in some instances be occasioned by inflammation of that membrane transmitted to the contiguous tissues, while in others it seems to arise from perforation of the intestine by ulceration, and the contact of its fecal contents with the cellular structure immediately on its outside."

On examining tumours in the iliac region, we sometimes meet with cases which do not arrange themselves under the class of merely phlegmonous tumours, in the general acceptation—for it will sometimes be found that the tumour consists of scybalous masses distending the cœcum, and occasioning colicky pains and other phenomena attendant on phlegmon in the same situation. Even flatulent distention of the

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cæcum is often distressing. A sense of tension here is not unfrequently felt on taking horse-exercise soon after meals. The pain is acute—is relieved by pressure—and generally goes off in a few minutes. The distention produced by feculent matter is a more serious, because less transient, source of uneasiness, and pressure here gives pain. "A full colon has occasionally been treated for hepatic disease; and the diagnosis been apparently justified by tenderness on pressure, and resistance and tension in the muscles which protect the hypochondriac and epigastric regions."

That vascular congestion obtains in most cases of painful tumour of the cæcum, the author is ready to admit; but that we may have a painfully distended cæcum, without any marked evidence of inflammation, he is satisfied. M. Meniere, however, is of a different opinion, and believes the tumour to consist, in every instance, of deposits external to the intestine, considering the inflammation as the primary and essential condition of the complaint. He looks on the constipation as altogether accidental, neither constituting the bulk of the tumour, nor having any share in the production of the disease. Mr. F. has come to a different conclusion, and offers cases to support his opinions. The following one is sufficiently convincing.

"4th July, 1823.—I was requested by M. K. to see Margaret Hopkins, aged 18, the daughter of his house-keeper. She had passed a sleepless night, raving constantly. She was tossing about in the bed, and kept her eyelids forcibly closed; talked incoherently, but when questioned complained of pain in the right side of the abdomen. On examination, (to which she was very averse,) the right iliac region was found to be swelled, hard, and apparently very tender. The remainder of the abdomen was pliable to the touch. Bowels confined for the last five days, but she was yesterday apparently in good health; tongue loaded at the back part, clear white anteriorly, and along the sides; skin hot; pulse when first felt (which was immediately after the examination

of the tumour) 120, and small. This suggested the idea of inflammation; but before I left her I found it reduced successively to 100, 90, and finally to 75. She was thirsty, but there was no irritability of stomach.

The abdomen ordered to be fomented, and an enema to be thrown up, (containing *Oleum Terebinth.* and foetid tincture,) every fourth hour *ad effectum.*

Vespere.—She is better. An hour after the enema was administered a quantity of indurated faeces came away. The enema was repeated with continued effects. She is now free from pain and perfectly composed; skin moist; pulse 70; no trace of swelling or tenderness is discoverable in any part of the abdomen."

No doubt a prolongation of the impaction of the faeces would have led to inflammation in this case—but we think there is no evidence of its having commenced when the bowels were cleared.

Case 2. 13th August, evening. Mr. L. was seized with pains in his bowels, accompanied by nausea and general illness. Various purgatives were tried, but they all returned. On the 18th our author saw the patient. The abdomen was full, but yielded readily to pressure till the hand traversed the right iliac région, where there was a good deal of tension and tenderness to the touch. This fulness was found to occupy but a limited space between the spine of the ileum and the middle line of the abdomen. The tumour was deeply seated, but the parietes rolled freely over it in certain positions. His tongue was thickly coated—pulse 90—skin hot and dry—lay on his back, with his knees drawn up. Enemata and the hip-bath. 19th. He was better, some hard scybala having come away. The abdomen was less full; but the iliac tumour was perceptible to the eye. Enemata, leeches, hip-bath—a grain and a half of calomel every four hours. 21st. Mr. Colles, of Dublin, visited the patient with Mr. F. Some more scybala had passed—and the bulk of the tumour was diminished. Calomel continued—enemata every six hours. 22d. Motions now fluid, and nearly of a natural colour—abdomen

reduced—swelling much less. 24th. The mercury has affected the breath and the gums—dejections fluid and yellow—the swelling in the iliac region nearly gone. Calomel discontinued. From this period he went on well, and gradually recovered health.

"Mercury does not appear to enter into the treatment at the Hôtel Dieu; but while we are engaged in lessening the inflammation by depletion, we should not lose sight of the propriety of attempting the removal of the effects already produced by diseased action, as far as it has gone. Independent of the coagulable lymph thrown out in the cellular tissue surrounding the *cæcum*, it is probable that some degree of thickening has taken place in the mucous and peritoneal coats. Though this may subside in the progress to convalescence, it may, on the other hand, remain and become the nucleus for disease at a more distant period, when a resumption of imprudent habits shall have exposed the parts to fresh irritation. Chronic disease in this situation is not very uncommon; and with this experience it becomes our duty to institute, as early as possible, a plan for promoting the absorption of effused fluids, and the restoration of healthy action in the parts. The peculiar power of mercury is here favourable to our purpose, and after the reduction of the urgent inflammatory symptoms, generally fulfils the indication with tolerable certainty. A case is lately detailed by the Editor of the Medico-Chirurgical Review, in which this remedy was employed by himself with the best effects; and, as far as I have observed, I believe it will be found to constitute a very efficient instrument in combating this dangerous affection."

Some cases are detailed by Mr. F. where inflammation and suppuration of the *cæcum* took place, but these we shall not notice at present. We point the attention of our readers to the more common and more remediable affection—impacted fæces—an affection too often neglected because not suspected.—*Ed. Journal.*

II.

DOTHINENTERITE. By DR. CORRIGAN.

We have, on several occasions, differed with Dr. Corrigan on physiological points—we are happy to have an opportunity of agreeing with him in pathology. In the last number of our Edinburgh contemporary, Dr. C. has published some hospital reports, and, among others, a case of DOOTHINENTERITE, (which, by the way, the Doctor persists in calling DOTIENTHERITE, contrary to M. Bretanneau and its Greek derivation,) with some judicious reflections. The case was as follows.

Case. The patient was a young man of temperate habits, whose illness commenced, ten days before the Doctor saw him, with lassitude, and dull pain across the eyebrows, which symptoms continued with varying intensity up to the morning of the first visit, when stupor set in. The Doctor had some difficulty in rousing him. His countenance was pallid and congested—eyes dull, but not diffused—sensible to light, but not pained by it—feet and skin cool—pulse 80, labouring, slow—tongue clean—bowels confined—abdomen soft. Dr. C. took blood from the temporal artery, and ordered the head to be shaved. Calomel was administered in large doses—turpentine enemata were exhibited—and the feet fomented. Next day there was less stupor. Skin cool and covered with small petechiæ. The bowels had been freed but once—tongue clean. Venesection to twelve ounces—a senna mixture—large blister to the head—enemata continued. The pulse, immediately after bleeding, rose to 100, and became free. In the night, delirium took place—and on the next day, (13th of his illness,) there was intolerance of light and noise—twitchings of the muscles—pulse 120—hot skin—brown tongue—tender abdomen—free bowels. Calomel, with ipecacuanha, in small doses, was given every two hours. Next day, the delirium continued—the pulse rose to 134, full and vibrating—stools and urine became involuntary—abdomen tender and shrunk. He died ra-

ther suddenly on the next day but one, the sixteenth of the fever, after a quiet sleep of five hours.

Dissection. "The vessels of the dura mater and pia mater were very turgid, and all the large venous trunks were distended with colourless coagulum. The substance of the brain was very vascular, and the ventricles contained four or five ounces of clear fluid. The mucous membrane of the stomach and intestines (speaking generally) was natural in colour and consistence. The mucous glands of the duodenum were enlarged and hardened, so as to give to the finger, when passed over them, a sensation as if small grains of shot were imbedded under the mucous coat. Small ulcerations in great numbers were spread along the internal antimesenteric surface of the jejunum and ileum, and about the *caput coli*. The edges of the ulcers were hard; the mucous membrane around them not inflamed. These ulcers seemed to be the last stage of the disease of the glands, the commencement of which was the enlargement and hardening described as existing in the duodenum."

Dr. C. very naturally asks, was the death of this patient owing to the ulcerations in the intestines, a conclusion to which the disciples of Bretonneau, Louis, and even Broussais would come at once? After much close and appropriate reasoning, Dr. C. arrives at a different conclusion, namely, that there was quite enough of disease in the head to occasion death, and to that organ the symptoms, during the disease, were unequivocally referrible. The abdomen was not complained of till the 11th day of the illness, and the bowels up'to that time were confined.

"Weighing all these considerations, we cannot but come to the conviction, that the French opinions are not well founded, and that our own practice of viewing symptoms in fever, (generally speaking,) as direct signs of diseased actions in the organs, whose altered functions furnish them, is better calculated to lead us to an accurate diagnosis and a safe treatment. If we compare the results of treatment, we find little encouragement to exchange our

views for those of the French. In our treatment the mortality is from one in eight to one in twelve. From Louis's own account, the mortality in treatment directed by the opinion, that the fever in question has its seat in the Peyerian glands, is one in three."

Some of the Broussaians would be wicked enough to say or insinuate that the "large doses of calomel" and the turpentine enemata, exhibited at a time when the brain was oppressed and the intestines consequently in a torpid state, were the chief causes of the ulcerations in the bowels. Certain it is that the abdomen became tender on the second day after these means were used, though we do not aver that this tenderness was the consequence of the remedies. Nevertheless we think we have seen mischief done by heroic medicines given where the brain is oppressed, and where the intestines will not respond to medicines in the same manner as when the brain is not labouring. The grand object is to relieve the organ which is most affected, and that, if possible, by means applied near the organ itself. By this procedure we obtain our object, if attainable, without paying too high a price in the injury of another part. This is a practical hint worth bearing in mind.

III.

MOLLESCENCE OF THE BRAIN—SEROUS APoplexy—NERVOUS APoplexy.

[Hôtel Dieu.]

I. MUCH discussion has taken place respecting the nature and cause of softening of the brain. The earlier pathologists, when they met with this condition of the organ, did not attempt to account for it—and, under the name of apoplexy were ranged the various alterations of the cerebral mass. Valsalva and Morgagni regarded mollescence of the brain as a kind of decomposition or putrefaction, the effect of which was suddenly fatal. When their scalpel detected this state of the organ, they looked upon it, not as the cause of the

disease under which the patient had laboured, but as the final termination of the malady. Bayle, Cayol, Recamier, and other modern pathologists, have drawn attention to the subject under consideration—carefully describing the appearances, and cautiously endeavouring to account for them. Recamier designates the morbid cause by the old name “*ATAXIC FEVER*”—and the effect he terms “*foyer ataxique*.” Rostan is more cautious. He minutely details the symptoms and post-mortem appearances, styling the affection an “*organic alteration*,” which, of course, prejudgets nothing as to the nature or cause. Lallemand indeed is more bold. He ascribes the *ramollissement* at once to an inflammatory process—and in the majority of cases, there can be little doubt that this condition of the brain is the effect, the termination of *encephalitis*. On the other hand, when in and around the softened portion of brain, we can discover no sanguineous injection, no purulent infiltration, no morbid secretion whatever—nothing but a mere diminution of consistence in the nervous pulp—how can we call this inflammation? Andral doubts the correctness of the exclusively inflammatory doctrine—and in a report from the *HÔTEL DIEU*, published in a recent number of the *JOURNAL COMPLEMENTAIRE*, there are some cases related to shew that Lallemand’s hypothesis is not quite correct. Some of these we shall here notice.

Case 1. A female, aged 68 years, entered the *HÔTEL DIEU*, on the 14th June, 1830, for a slight bronchial affection, for which she was treated in the usual manner, and soon recovered. On the 1st of July, this woman, while walking about the wards, suddenly fell down deprived of sense and motion. The pupils were contracted, the face pale, the respiration quick, the pulse hard and frequent. The case was pronounced, of course, to be apoplexy—and venesection, sinapisms, &c. were ordered. She lingered in a wretched state for 25 days, when mortification of the integuments of the back put an end to her existence.

On dissection, there was no turgescence of the vessels of the encephalic membranes. These membranes were rather pale than otherwise. The anterior portions of each hemisphere appeared natural; but on approaching the middle lobes, they were found without consistence, and a certain portion reduced to a kind of *bouillie*, where all trace of cerebral texture was lost. There was no mark of inflammation, or even injection in any part of the brain.

Case 2. This occurred in the hospital for old women. A female, aged 79 years, of apparently good constitution, had been in the *Salpêtrière* since the 13th July, 1830. She was carried to the above institution on the 25th April, 1831. She had complained, for a fortnight, of her head in the right side, while there was numbness or sense of formication in the extremities of the opposite side. There was some impediment in her speech. She ate and slept well. The left arm gradually lost its motile power, and the lower extremity was benumbed. The other side possessed motility and sensibility.—There was little disturbance in the other functions. For a fortnight, or so, the paralysis gained ground, and then she remained hemiplegiac for a month or more. Pains then came on in the affected parts—agitation and delirium at night succeeded—the evacuations became involuntary—and death closed the scene.

On dissection, the meninges of the brain appeared gorged with fluid blood, which also flowed freely from the sinuses of the *dura mater*. There was nothing unusual in the external character of the cerebral mass; but, on penetrating some way into the right hemisphere, a focus of mollescence (*foyer d’un ramollissement*) was discovered, six inches in length and two in breadth. There was no other organic alteration of any consequence in the brain.

II. Serous and Nervous Apoplexy. Is there such a disease as serous apoplexy? When, on opening the body of a patient who has died with the usual symptoms of apoplexy, we find a con-

siderable effusion of serum either between the meninges or in the ventricles, without any other phenomena to account for death, we say, with Morgagni, that, in such cases, the brain is compressed by the water, in the same way that, in sanguineous apoplexy, it is compressed by blood. Magendie, indeed, has shewn that, in health, there is a certain quantity of serous fluid, both in the ventricles of the brain, and in the spinal canal—and that, in old people, there is a diminution of the brain, and a corresponding increase of water. M. Serres has made experiments which seem to shew that the brains of animals will bear a considerable degree of pressure with impunity. Finally, we find effusion to a considerable amount, after death, in cases where there were no symptoms of apoplexy before that event. But we must not be led astray by anomalies, which abound in physiology and pathology. Nothing can be more certain than that a preternatural collection of fluid in the ventricles or between the meninges is dangerous or fatal, according to the degree of accumulation. In the great majority of these serous effusions there is previous inflammation or vascular excitement—but it must be admitted that in some cases, there are proofs of such inflammatory origin; and hence we have reason to conclude that a morbid collection of serum may suddenly take place independent of congestion, or at least of inflammation. We shall glance at one or two cases brought forward, in the HOSPITAL REPORT already alluded to, in the JOURNAL COMPLEMENTAIRE.

Case 1. (HÔTEL DIEU—Clinique of M. Rostan.)—A female aged 87 years, of good constitution, and previously enjoying good health; became suddenly insensible, on the 23d of February, at 10 o'clock in the morning. Hemiplegia of the right side was complete. Examined immediately, there was observed some disturbance of the circulation, and some spasmoid movements, and a natural ptysism. The paralysis appeared to commence in the lower extremity, then affected the upper, and lastly the tongue. There were clearly

defined intervals between these phenomena, apparently indicating the successive stages of accumulation in the head and spine. On the 24th there was profound coma, with febrile heat, and general re-action. 25th. The re-action more decided—the patient was able to give some account of her sensations and preceding ailments. She stated that she had had pain in her head, with giddiness, and occasional loss of sense for a year past. Sixteen leeches were applied to her neck, and laxatives were given. For some days after this, she appeared to get better. Her speech was improved—motion and sensation were in some degree, restored to the right lower extremity. In the beginning of March, however, her strength declined—all re-action ceased—the tongue became dry. Tonics were tried—but she died on the 10th of March.

The meninges were in their natural state. So did the brain itself appear. On making incisions into its substance, no injection was visible. The parietes of the ventricles, however, were pointed with blood, and the inner surface dark-coloured with the same. The ventricles themselves were greatly distended with a pellucid fluid, amounting to at least six ounces. The third and fourth ventricles were filled with the same kind of fluid. There was no other morbid phenomenon in the head, which was carefully examined by M. Rostan himself, who had prognosticated that a sanguineous effusion would be found on dissection.

Case 2. A female, aged 28 years, of apparently good constitution, but enfeebled by several accouchements and by the development of a scirrhoue ovarium, was seized on the 15th March last, after some hours' vague complaints, with vertigo, a degree of general insensibility, and complete loss of speech, attended with some convulsive movements of the upper extremities. The pulse was calm and regular—the skin rather cool than otherwise—the breathing slightly accelerated—the expression of countenance much altered. A physician was called in and prescribed; but in a few hours she revived con-

siderably, though there was still much loss of sensibility. She was able to speak tolerably clear. 24 leeches were ordered to the head, and sinapisms to the feet. It was pronounced to be a case of sanguineous effusion in the head. In the evening, there was paralysis almost complete of the right side, with some arterial re-action. The pupils were dilated—the speech much embarrassed, but not entirely extinguished. It remained in nearly the same state during the 16th—and on the 17th paracentesis abdominis was performed, and ten pints of fluid were abstracted. As the water flowed from the puncture, she appeared to regain sensibility, and when the operation was over, she was very sensibly improved. Next day (18th) she made many efforts to speak, but was only able to articulate the word *Amen*. At nine o'clock the same evening, while being transported from one bed to another, she uttered a cry indicative of great pain, and expired five hours afterwards in great agony.

Dissection. We need not describe the appearances in the abdomen, where a vast ovarian disease existed. There was much serous infiltration throughout the whole body, and this was observed between the meninges of the brain. In the middle part of the left hemisphere there was observed a roundish patch of sanguineous ecchymosis, an inch and a half in diameter, and a quarter of a line in depth. The sinuses and the vessels of the brain were immoderately distended with blood. The cerebral pulp appeared sound. The ventricles and the spinal canal were filled with limpid serum.

Nervous Apoplexy. The next question discussed by the Hospital Reporter, is the existence or non-existence of nervous apoplexy. The term nervous he defines to be an alteration in the vital powers or properties. But he confesses that he cannot conceive any such alteration except as in connexion with a morbid alteration in the organic structure. So far he denies the existence of nervous apoplexy. "But if," says he, "by nervous apoplexy we mean a sudden death without any appreciable organic

change—an instantaneous stroke of the nervous system, which causes death without altering, as far as we can discover, the organization of any part, then there is such a disease." There is an apoplexy which is neither sanguineous nor serous, but something different from both, and as yet unascertained as to its true nature. The following case is reported by M. Cruveilhier, as an instance.

Case. M. D. a surgeon-dentist, aged 23 years, of good constitution, and in excellent health, was remarkably well on the fourth of April. He dined at six o'clock, and then went out to walk. He suddenly fell down on his face, and died instantaneously. M. Cruveilhier was at hand, but life was entirely extinct. On dissection, the integuments of the head were found injected. On removing the cranium the dura mater appeared livid—and all the sinuses and veins were gorged with black blood. The substance of the brain itself presented nothing particular. M. Cruveilhier considered all these phenomena as secondary and consecutive. The congestion of vessels were the effect or sequence, not the cause of death, which he considered as *NERVOUS APOPLEXY*.

This may admit of doubt. It might perhaps be equally well styled a blood-stroke (*coup de sang*) as a nervous affection. But we are ready to grant that the nervous system, in such a case, is the first affected, and the vascular system the second.

IV.

CANCER OF THE STOMACH MISTAKEN FOR HYPERSTROPHY OF THE HEART—PERFORATION OF ITS COATS, WITHOUT EXTRAVASATION INTO THE ABDOMEN. Observed in the Hospital St. Antoine.

Case. ADRIAN HUBERT, aged 54 years, began to experience symptoms of disease three years ago, and for which he had been in several hospitals, with little relief—or rather with positive dis-

advantage. In one place he was treated for disease of the heart, because of frequent palpitations of that organ—in another, it was thought that there was some mechanical obstruction in the venous system, from the oedematous state of the hands and feet—in a third, the disease was pronounced *gastro-enterite*, the patient complaining much of pains in the abdomen, and diarrhoea—while, finally, there appearing symptoms of icterus, he was pronounced to have hepatitis. In the Sr. ANTOINE hospital they fell into error, as did their predecessors. The patient, on his entrance (17th of April) complained only of palpitations in the cardiac region, flying pains of the chest, and some difficulty of respiration. The pulse was 100 in the minute. No pulsation of the heart was felt by the hand, but the ear heard a distinct bruit, which, however, varied much in intensity and regularity. As the medical officers of the hospital were then much employed in testing the effects of digitalis on the action of the heart, it was determined to exhibit it in this case: but there being some symptoms of gastric irritation or inflammation, these were first combated by proper means and rigorous diet. The appetite returned, but the patient still referred to pain in the region of the heart. Food was now permitted, and on the 29th April, the digitalis was commenced—*six grains of the powder daily*. This dose was continued till the 3d of May, without making much impression on the pulse, which was at 70 in the minute. In the following days the dose of digitalis was increased to nine grains, and the pulse came down to sixty. On the 6th of May the patient complained of colicky pains in the belly—diarrhoea came on in the evening—vomiting followed the last dose of the digitalis—and the countenance expressed great sufferings. The digitalis was, of course, suspended, and food, which had hitherto been allowed freely, was restricted to gum and rice-water, with a single plate of soup. The pains gradually lessened—the diarrhoea ceased—and the patient once more got some appetite for solid food; but was still kept low. On the 15th of May, the scene greatly changed.

The oedema which had hitherto been confined to the feet, now suddenly extended to the whole of the legs and thighs—the prostration of strength was great—the pulse became rapid and feeble—nausea was constant—the respiration embarrassed—the epigastrium exceedingly tender and painful—the stools liquid and frequent—the tongue red at the point—the countenance yellow and sallow. He lingered out a wretched existence till the 7th of June, when he was relieved from his sufferings by the hand of death.

Dissection. The lungs were perfectly sound and crepitous. On opening the pericardium a patch of adherence between that and the heart, the size of a half-crown, was observed; but without any lesion of the central organ of the circulation whatever. The heart was not at all enlarged—its valves and chambers all in a natural state. The liver was black, and parts of it softened. The gall-bladder was shrunk to nothing, and perfectly void of bile. In the small curvature of the stomach was a vast ulceration, with complete perforation; but the contents of the stomach were prevented from being extravasated by a fold of the little omentum, which formed a kind of plug to the perforation—"était introduite dans la perforation, et l'obstruait à la manière d'un véritable bouchon." There were several other ulcerations, some large and some small, with considerable traces of inflammation. Near the pylorus was situated an enormous fungoid tumour, the size of a man's fist, the neighbouring coats of the stomach being greatly thickened and indurated. The surface of this tumour was ulcerated, and through its centre ran the perforation before alluded to, and which was corked by the piece of omentum. The pyloric orifice was not affected, and consequently the chyme passed readily from the organ, which was not augmented in capacity. The cancerous mass evidently pressed upon the ascending cava, and thus, in all probability, produced the dropsical infiltrations.—REV. MED.

How this case could have been mistaken for hypertrophy of the heart, it is difficult to imagine; but it is easy

enough to conceive that the enormous doses of digitalis exhibited to this unfortunate patient did not contribute much to his comfort, or to the mitigation of the dire disease that was going on in a vital organ !

V.

OBSERVATIONS ON SYNCOPES AND CEREBRAL CONGESTION. By M. PIORRY.

The above subject occupies the 5th section of M. Piorry's Collection of Memoirs, and deserves some notice in this Journal.

1. *Causes of Syncope.* The general opinion, corroborated by Bichat, was, that syncope was entirely owing to suspension of the heart's action. But it is to be remembered, says M. Piorry, that many of the exciting causes of syncope, as moral impressions, odours, the sight of disgusting objects, &c. can only act on the brain or the organs of sense. Is it the same in syncope from haemorrhage? Let us, says our author, interrogate the facts. It is rare that, in syncope, the action of the heart completely ceases. In haemorrhage, the cerebral functions fail before the contractions of the heart. The latter organ beats a long time, though feebly, after the sensorial functions are suspended. The heart is found to beat for some time after an animal has been bled to death. If a man or animal be kept with the head elevated, after a considerable quantity of blood has been lost, syncope will take place, although the heart will be heard to beat in the chest, and even the pulse felt in the arteries of the lower extremities. "It is, therefore, in the brain that lipothymia commences." If we lower the head, and raise the inferior extremities, syncope will cease—hence we may conclude, that it is the restoration of cerebral excitement which puts an end to syncope. Those syncopes (says our author) which are produced by certain moral impressions and sensations, are evidently the result of defective action in the brain, the same

as in the other cases. Pullen, indeed, separates these two kinds of syncope, placing those from haemorrhage to the account of the heart—those from moral impressions or physical sensations to the brain; but Bichat, with whom our author disagrees, traces both classes to the same origin—the heart—M. Piorry, to the brain, conceiving that the heart is only secondarily affected.

— *Diagnosis of Syncope from Cerebral Congestion.* To discover that an organ is suffering requires not much skill; but to ascertain the mode in which it is labouring is not quite so easy. If irritation was always the same in its nature—"if diseases were, in all cases, alterations in plus, and never in minus—in short, if there were no specific diseases, diagnosis would be a much easier study than it is. But reason, as well as experience, shews that there are different kinds of irritation—and it is in the endeavour to maintain its identity in all cases, that the disciples of Broussais have thrown themselves most off their guard. An organ will often exhibit the same symptoms from excess, and from defect of stimulus. Thus, when the retina is over-excited by intense light, indistinct vision is the result. The same takes place when we pass from a very clear light to an obscure one. The voice becomes hoarse when the larynx has been much exerted—and the same thing often occurs if we remain several days without exercising this organ. An instance of this is related by the author, but we imagine it is far from being a general phenomenon. The stomach becomes irritated, painful, and even inflamed, from excesses of the table:—the same phenomena occur when hunger is long sustained. The disease called hemicrania is occasioned by plethora, and also by inanition. The muscular fibres of the stomach, bladder, rectum, &c. contract by the excitation of their contents, or the influence of the nerves distributed to them. They contract also convulsively when they are deprived of their due supply of blood, or when the brain ceases to receive its supply of the vital fluid. Finally, observes our author, the

phenomena of syncope and of apoplexy, or cerebral congestion, display an analogy and similitude that, he has no doubt, causes them often to be confounded. The distinction, however, is of vast importance, and M. Pierry proceeds to inquire, if there be any functional symptoms which can tend to elucidate the diagnosis.

1mo. In cerebral congestion, or apoplexy, there is suspension, more or less sudden, of the intellectual functions:—The same in syncope.

2do. In the *former* disease, there is a suspension of function in the organs of sense:—The same occurs in hypo-thymia. In both cases, we sometimes see spasmoid contractions, sometimes loss of power of the members.

3to. The drawing of the mouth and the partial paralysis have been laid down as pathognomonic signs of effusion on, or some disorganization of the brain; yet our author has seen these phenomena unequivocally in syncope. The same may be said of convulsive motions in the eyes and muscles of the face—involuntary evacuations—stertorous breathing, &c. The state of the circulation furnishes more certain diagnostic marks. The contractions of the heart, in cerebral congestion, are slow, soft, and easily analyzed. In syncope, they are accelerated, weak, and very irregular. The pulse in general, and especially in the arteries about the head, is full, vibrating, and slow in apoplexy—the reverse in syncope. In the *former*, the face is red—in the *latter*, pallid. But these indications are not always so very clear in the state of the circulation. Cerebral congestions or apoplexies sometimes supervene in individuals, whose circulation is languid and pulse feeble—whose faces and lips are habitually pale. Thus, he observes, the diagnosis between syncope and apoplexy, in many cases, is very difficult; and yet it is of the greatest importance that these two affections should be accurately distinguished from each other, as they require diametrically opposite treatment. The author is quite sure that the two affections are often confounded—acknowledging that he himself has committed the mistake. In-

deed he relates a case of this kind. The diagnostic mark which M. Pierry relies on is altogether a physical one. It consists in the *position* of the patient. If the phenomena depend on syncope, the horizontal position will ameliorate the symptoms, and vice versa. If, on cerebral congestion, the vertical posture will relieve, while the horizontal will aggravate the symptoms. In the latter case (cerebral congestion) M. Pierry recommends ligatures to be placed on the extremities, to produce a stasis of the blood in those parts. We much doubt the utility of such a procedure. If ligatures prevent the return of venous blood from the limbs, it also prevents any arterial blood being sent to them. The thing, therefore, is as broad as it is long.

II. ON DEATH FROM SYNCOPES—OBSERVATIONS ON VENESECTION IN GENERAL.

The cessation of the cerebral circulation is, our author thinks, next to asphyxia from the accumulation of bronchial mucus, the most common way in which death takes place. In all great haemorrhages, there is an abundant secretion of fluid from the surface of the intestinal canal, and also from all the other mucous tissues, which tends further to exhaust the strength and deprive the brain of a due afflux of blood. The heart being ill supplied with nervous energy from the brain, becomes distended, and at length ceases to carry on the circulation. From the circumstance that the brain is encased in bone, the vessels will be found full after death, even from haemorrhage—and this has led some pathologists astray. Our author has often seen death occasioned by injudicious venesection. In dilatation of the heart, at the Hôtel Dieu, he has often seen the fatal effects of bloodletting. The author therefore lays down a set of rules respecting venesection, which he thinks it would be of great use to observe.

1mo. When, in a person, we find a dull sound on percussion of the chest—when there is active dilatation of the heart—when the liver is enlarged—the veins distended, the pulse full, and the circulation active, we may be sure that

the circulation is in excess, and we need not fear to bleed freely. But if the symptoms are the reverse of the above, we should be cautious in the use of the lancet. We should also be cautious, he observes, when the skin is fresh-coloured, but where the internal organs give indications the reverse of plethora. In doubtful cases, we should never bleed in the horizontal position; for if syncope then occurs, we have no resource from change of posture.

VI.

PART I.—THE PRINCIPLES AND PRACTICE OF OBSTETRIC MEDICINE, IN A SERIES OF SYSTEMATIC DISSERTATIONS ON MIDWIFERY AND THE DISEASES OF WOMEN AND CHILDREN. By DAVID DAVIS, M.D. &c. Quarto, with a Plate.

As this first part only contains the introduction of the author, and some observations on the anatomy of the female pelvis we can do little more than announce the publication, till we see further specimens of the performance. It is the usual practice of lecturers on midwifery to discuss the whole of the obstetric department at the beginning, or at a very early period of their course, taking up the diseases of women and children successively afterwards. The author flatters himself that he has adopted a more consecutive and philosophical arrangement of his matter.

"The peculiar diseases of women are principally affections of organs which are proper to the sex. Of such organs there are diseases of structure and arrangements of function. To obtain an accurate knowledge of either of these varieties of morbid condition, it is manifest that an acquaintance must be previously possessed with the structure and functions of the same organs in their healthy state. In accordance with these views, the author has chosen for himself an arrangement which he believes will enable him to treat of all the subjects, which he will have to discuss, in their most obvious connexion and natural juxta-position under their respective heads of, STRUCTURE, FUNCTIONS,

AND MORBID STATES BOTH OF STRUCTURE AND FUNCTIONS."

The second chapter is on the pelvis, and we take the following remarks on pelvimeters as a specimen of the work, so far as it has yet gone. After giving a pretty full account of the various pelvimeters invented on the Continent, Dr. Davis observes:—

"In this country artificial pelvimeters have been very seldom used, and, perhaps, never exclusively depended upon; whilst, indeed, there is not one diameter, nor any portion of the cavity of the pelvis, which cannot be much more accurately ascertained by the natural pelvimeter, the practitioner's hand, than by any artificial means whatever. The length of the conjugate diameter may, at all events, be most accurately determined in this way. SEE PL. IV. FIG. I, II. The patient being placed on her left side, the medical attendant's fore-finger is to be carried up to the promontory of the sacrum. Whilst the point is made to rest on the sacral projection, some inferior portion of it will cross the arch of the pubis, the apex of which it may be made more or less distinctly to feel. This part of the finger should be accurately marked with the nail of the index finger of the practitioner's other hand. The intermediate distance between the part of the finger so indented and its point resting on the promontory of the sacrum, will of course be the measure of a line drawn from the promontory of the sacrum to the apex of the arch, the thickness of the symphysis pubis inclusive. Making an allowance for this thickness, and for the greater length of the line thus obtained, by reason of its greater inclination, than of the conjugate diameter, the length of the latter line, the conjugate diameter of the brim of the pelvis is determined with considerable accuracy. Should the practitioner's index finger prove too short to reach the promontory of the sacrum, presuming on its being of the ordinary length, and on its being passed up in a proper direction, it would, then be a matter of generally safe inference that the pelvis was of sufficient capacity in the direction of the conjugate diameter.

Inasmuch, however, as a greater degree of precision might be desirable in some doubtful cases; it would be quite easy for the medical attendant to obtain it by carrying up his index and long finger together, so that the latter might be placed upon the promontory of the sacrum. He would then have to indent the nearer part of his index finger as in the former case. The distance between the part so indented of the index and the point of the long finger resting upon the sacrum would give the length of the conjugate diameter, together with the allowance of half an inch for the greater length of the line actually measured, and the thickness of the symphysis pubis. The distance so obtained would be easily determined by applying a common rule to it.

But the conjugate diameter may by possibility be of sufficient length, and yet the space on either side of it might be too contracted to admit the head of a well-grown child to enter into the pelvic cavity. The fact of this malformation may also be ascertained with tolerable accuracy by the hand. For this purpose the whole of the hand is to be introduced into the vagina and carried up edgewise, *i. e.* with the index finger in front, and the little and ring fingers behind, to the lateral portions of the pelvic cavity; so that the points of the fingers shall rather more than clear the brim. Should there be found sufficient room on either side of the diametrical line for the hand so introduced to maintain the parallelism of its fingers, *i. e.* to lie there without being forced to ride over each other, then it would be matter of conclusion that with sufficient space in the middle, added to the ordinary space on the other side, there would be found ample room for the descent of the child's head into the general cavity. The practitioner then would have to pass his hand along the other side of the pelvis, and subject its dimensions to the same test. If, indeed, the hand was carried up along and nearly in contact with the lateral parieties of the pelvis, and room was found there even for THREE FINGERS to lie together in moderate parallelism, the conjugate diameter being at the

same time of sufficient length, it would be competent for the medical attendant as a general rule, to infer favourably of the dimensions of such a pelvis."

An excellent lithographic plate, containing various views of the pelvis, is prefixed to the fasciculus. The work promises well, from the talent of the author, and the cheap mode of publication.

VII.

ON ONE OF THOSE AFFECTIONS DESIGNATED MIGRANE, (MEGRIM,) OR HEMICRANIA. By M. PIORRY, M.D.

THE foregoing subject occupies some twenty pages of M. Piorry's late work on pathology, diagnosis, &c. from which we have already made some extracts in other parts of the Journal. The author observes that, under the term hemicrania, authors have arranged several different disorders. Chaussier and his followers have pronounced it a neuralgia of intermittent or continued character, and of greater or less intensity. The author agrees with this opinion; but observes, that hemicrania cannot always be considered as a facial neuralgia. It differs, he remarks, materially from tic douloureux, and also from the pains occasioned by carious teeth. If, indeed, says he, we understand by the word hemicrania, a pain seated on one side of the head, almost all neuralgia of this part must come under the designation, since few of them attack more than one side of the body, or pass the median line. But if, by hemicrania, we mean a specific affection, having its seat in or near one of the eyes—differing from all the other neuralgiæ—followed by sickness and generally relieved by vomiting—ceasing after a single paroxysm, not to return for a considerable time in general—then we must separate hemicrania from the other neuralgiæ with which it has hitherto been confounded, in order to study its symptoms, its signs, and its treatment. The author affirms that he has paid great attention to this disease—and thinks that investigation of it

throws some light on the neuroses in general.

The complaint in question is conceived by the author to be a neurosis, or rather neuralgia of the iris, which, at first bounded to that membrane, or, more properly speaking; to its nerves, extends to a number of other nervous branches, and is characterised by disturbance of vision, succeeded by pain in the eye, or on the surface of the cranium, by sickness, and by vomiting. This ophthalmic neurosis is observable among people whose sight is weak, to whom strong light is disagreeable, and dark rooms pleasant—who study and write much—who lead a sedentary life—and among workmen who are much occupied with the inspection of minute bodies.

On the other hand, we rarely see this complaint in people who lead an active life in the open air—who are habitually exposed to a strong light—and who do not exercise the eyes much. It occurs chiefly, according to the experience of the author, under two opposite conditions of the stomach—a state of too much repletion, and too great abstinence. In people, in these conditions, a very slight exertion of the eyes will often bring on the ophthalmic neuralgia. A physician of the author's acquaintance generally experienced an attack of this complaint every time that he read a lecture on medicine. Whenever he left off lecturing, or at least the reading of his lectures, he ceased to have the hemicrania; and whenever he resumed the avocation, the disorder returned. It was remarked that these lectures were delivered on a full stomach directly after dinner.

The hour of attack, however, is not confined to any particular period—sometimes immediately after the application of the exciting cause—sometimes not till after several hours, but generally within the 24 hours. At the moment of invasion, the sight becomes less clear, and there appears a kind of black speck in the centre of the eye, which gradually enlarges and spreads to the other parts of the organ, still partially surrounded by the arc of a luminous circle, of different colours in different indivi-

duals. After a time, this dark centre and sparkling circle begin to grow less distinct, and at last break up and disappear, with return of vision. These phenomena rarely take place, except in one eye. Thus far there is no pain experienced; but only a kind of stupor, with some derangement of vision and heaviness of head. But after a longer or shorter interval, some darting pains are felt in the eye and temple, and the least pressure on the ball of the eye causes much suffering. The patient complains that the globe of the eye feels too full, attended with pulsation of a dolorous kind. These sensations are not uniformly pungent, but remit and exasperate, like colick or spasmodic pains in other parts. The duration of these attacks varies from some hours to two or three days.

Meantime the senses of hearing, tasting, and smelling are more or less deranged with that of sight. The eyelids become red and tumefied—the access of light is insufferable—the least noise offends the ear—and the taste for food is quite perverted. The sensorial functions are undisturbed; except that there is a greater tendency to sleep than usual.

Such are the phenomena of cases the most simple; but very frequently the stomach participates in the complaints of the eye. Soon after the ophthalmic symptoms commence, eructations from the stomach take place, followed by some nausea, and even by vomiting of the food lately taken, or, if empty, of glairy mucus. In severe cases the stomach is not the only organ which sympathizes with the eye. Often one side of the tongue or of the face; or one of the upper or lower extremities experience a kind of painful tremor or vibration, like that which is felt after striking the cubital nerve, at the elbow, against some hard body. In general, the heart, lungs, and intestinal canal remain free from any morbid affection. A restorative sleep usually terminates the paroxysm, after several hours, or two or three days' duration. A heaviness of the head is felt for a day or two after the cessation of the hemicrania. The recurrence of the malady

is uncertain ; and generally only when the exciting causes are strongly applied. Our author knows a female who has six months' interval between the attacks, provided she does not read within two hours after taking food. If she uses not this precaution, she is sure of an attack immediately after her transgression. In certain individuals the attack is periodical, returning every eight days, every month, or every two or three months, with considerable regularity. In others, there is no fixed period for relapse.

The prognosis in this curious complaint, is generally favourable, as far as life is concerned ; but if the complaint proves rebellious, it renders life miserable. When it fails to be cured, the paroxysms return at shorter and shorter intervals, till life becomes one scene of suffering. Our author has not been able to find any information respecting the pathological anatomy of hemicrania ; but suspects that the scalpel will not reveal any lesion of structure in the brain or membranes to account for the phenomena. This neuralgia, he imagines, is too fugitive, subject to too many remissions or intermissions, to leave organic traces that might be detected by the eye. He justly observes that the dissecting-room is not the only place where we may study pathology. The sick-room will often afford us much useful information in this respect. An examination of the eye, during the attack of hemicrania, shews the pupil strongly contracted, and consequently the iris put upon the stretch, with redness of both palpebrae. From these phenomena M. Piorry concludes that, in hemicrania, an exciting cause acts on the retina and iris—the nervous action is modified—a kind of struggle takes place, evinced by oscillations and vibrations, with the luminous circle, dark spots, &c. before alluded to. In time, the fifth pair of nerves participate in the morbid action, and ultimately other organs and parts with which the fifth pair communicate.

TREATMENT.

Our author considers himself as very successful in the treatment of this pain-

ful malady. His first indications are to arrest the development of the series of symptoms constituting hemicrania—and to mitigate its accessions, (calmer ses accés.) It is at the moment of its commencement that the course of the malady is most easily checked. At this period all causes of excitation in the optic nerves and tissues should be removed. The patient is to be completely excluded from light and noise. This abduction of all stimulus will sometimes induce early sleep, and check the paroxysm. It is at this early period that the application of belladonna has occasionally succeeded in preventing the pain. The author and his colleague, M. Troussseau, cause the remedy to be rubbed on the temples, with the greatest success. M. Piorry dilutes the belladonna with a little water so as to form a kind of syrup, which is rubbed on the palpebrae as well as on the temples. The author uses only a very small quantity of the remedy, from one to three or four grains. He avers that he hardly ever fails to check the paroxysm by this means. It is to be borne in mind that, on the succeeding day, after the application of the belladonna, the pupils will be greatly dilated, and vision disturbed. But this effect and inconvenience are only temporary. The author has not employed belladonna internally. He has used opium, but with very indifferent effects. M. Piorry observes that the march of hemicrania may often be arrested by raising excitement in the stomach, by means of stimulants, as wine, spices, food, &c. A very smart stimulation to the feet will sometimes have the same effect. In case of failure, each symptom can only be combated by the most probable means. Quietude and darkness—cold applied to the eye affected—vomiting by means of large ingurgitation of warm water, will mitigate the pain, and somewhat curtail the paroxysm.

The prevention of a return then becomes the great indication. The causes already enumerated, are to be avoided, and especially all exercise of the eye in reading during the operation of digestion. After this process is finished in the stomach, the patient need not fear

to engage in study or other exercise. Exposure to a strong light, however, and sudden transition from a dark to an illuminated room are dangerous. Sometimes a local plethora predisposes to hemicrania, then abstraction of blood is proper. On the other hand, where the patient leads a sedentary life, and is debilitated, we ought to prescribe nourishing food, which is the best of all tonics. Great attention to the bowels is necessary, since constipation often renews the attack. It is remarkable that the author appears to have had but little experience of the efficacy of quinine in this complaint—and of arsenic he makes no mention at all. Yet these are the most potent of all remedies in the disease under consideration. We have met with the complaint very often—indeed, it is by no means unfrequent in this metropolis, among artists and others who lead a sedentary life, using the eye much, and the muscles of the body little. In these people, we have first cleared the bowels, and then given a sudorific at bed-time, with a good dose of colchicum and Batley's liquor opii sedativus. After this the quinine, arsenic, or both united, have seldom failed to put a sudden stop to the complaint. Quinine in small doses, for some weeks afterwards, is necessary to prevent relapses.

VIII.

LECTURES ON ANATOMY: INTERSPERSED WITH PRACTICAL REMARKS. Vol. III. By B. B. COOPER, F. R. S. Surgeon to Guy's Hospital, Lecturer on Anatomy, &c. &c. &c. Royal 8vo. pp. 300, 5 plates. London, 1831. Price 15s. bds.

Two volumes of this very useful work have been already published, and noticed in this journal. The third is now before us, and it does not derogate from the reputation acquired by its predecessors. So far as we can see, this system of anatomy is likely to prove the most complete, comprehensive, and generally useful of any at present before

the public. Mr. Cooper appears to be taking great pains to make his Lectures as useful to students as possible, and we do not doubt that those endeavours will be met by corresponding success. We cannot pretend to offer a formal review of a treatise on anatomy, but we may state that the practical remarks contain valuable information to students, whilst the general anatomy is copious, the physiological portion enriched with all the current knowledge of the day. As an instance of the manner which physiological subjects are treated, we are tempted to give rather a long extract; it is on the physiology of the human voice.

"The voice is produced in the larynx by its mechanical operation upon the air passing through it, much in the same manner as sounds are emitted from wind instruments; these sounds are variously modified, not only by the larynx itself, but in the direction they are made to take in their progress through the mouth and nasal passages, by the appropriate motions of the lips, lower jaw, tongue, pharynx, and fauces, as well as by the length of the trachea.

Speech is an acquired faculty, resulting from the appropriation of certain sounds emitted by the voice to express our ideas. The sounds constituting speech are infinitely numerous, as may be seen in the various languages and dialects of different nations.

The sounds of the voice, and their innumerable modifications, may be considered under three heads; natural, imitative, and musical sounds.

Natural sounds belong to all animals that have lungs; and may we not add the 'voice of the cricket,' though made by the motions of its wing and leg, the hum of bees, and various other sounds produced by insects.

The cry is the earliest natural sound, and establishes a remarkable instinctive intelligence between parent and offspring. Thus it readily expresses pain and fear, and will incite the almost defenceless hen to face the ferocious mastiff, in aid of her little ones in danger. The cry expresses the most simple wants and natural passions; and this sort of language is found in most animals. In man it belongs to all ages and states; the infant and the aged, the savage and

the civilized, the idiot and the person born deaf, all have the faculty of crying. It expresses many of our most vivid feelings ; thus there is a cry of rage, of fear, of pleasure, and of pain.

Imitative sounds form the basis of all languages ; hence speech is never acquired without the aid of the sense of hearing. Persons born deaf are also dumb, so far as the faculty of speech is concerned ; for the simple reason—because the ear is unable to appreciate the sounds which are employed in language to express objects and ideas. For the same reason, a person who hears badly, is often inclined to speak high ; or, having a false ear, has also a false voice : and those born deaf, who have been taught artificially to speak, have voices hoarse, dull, and with unequal inflections.

Young children begin by imitating the sounds they hear, in a very imperfect manner, being only capable of expressing those which are the most simple. In their early attempts they frequently substitute vowels, and sounds easy of expression, for names which are in any way complicated or harsh ; so also in their first attempts to construct a sentence, their errors are all simplicity, and are regulated only by careful education, and the force of correct examples.

Nothing proves speech to be the result of imitation, regulated by civilized education, more than the existing varieties of language among different nations, as well as the peculiarity of dialect in different parts of the same country.

Rhetoricians have entertained various opinions respecting the origin of languages, which would be superfluous to consider here, as indeed they have been in general too speculative to have led to any useful conclusion.

The modifications of the voice are expressed in letters ; and these, variously combined, form words, which are the signs of ideas, and the component parts of language.

The letters or alphabet are pronounced by varying the mode in which the voice is emitted : some letters, being quite simple, require hardly any action beyond the larynx itself : others require the motion of the tongue acting with its tip, middle, or base ; others of one or both lips ; while for the production of some, the air is made to pass the nasal cavities. Indeed, a clear pronunciation of any sound is not made when either from dis-

ease, or artificially, the nasal cavities are closed. The air, in its passage through the mouth only, appears to be arrested, and to impart a thickness to the voice ; or, what is improperly termed, speaking through the nose.

The letters have been divided by grammarians into vowels and consonants ; but, in a physiological point of view, we rather consider the mechanism by which they are pronounced. Thus the letters in all European languages, consist of those which are purely vocal, and are pronounced with very little effort ; these are *a, e, i, o, u*, named vowels, and proceed entirely from the larynx, subjected however to numerous modifications, depending on the force with which they are uttered, producing long or short accents. So also we have, as enumerated by Majendie, *a* very open, as in *hall*, English ; *â*, in *hâle*, French ; *u, ê, è*, and *e* mute, French ; *i, o*, open, Italian ; *o, eu, u*, French ; *u*, Italian. Other vocal letters are *b* and *p*, labial ; *d* and *t*, dental ; *l*, palatine ; *g* and *k*, guttural ; and *m* and *n*, nasal consonants. The other letters are *f* and *v, th*, English ; *s* and *z, ch, j, r, h* and *x*, Spanish ; *χ*, Greek ; and are produced chiefly by the air being forced against the sides of the mouth, and directed by the tongue, either by its tip, middle or base : *v* and *f*, by the lower lip and upper teeth : *r*, in English, has a much softer sound than in French, where it is pronounced by a vibratory motion of the tongue against the roof of the mouth.

Words are compound sounds, formed by the combination of letters ; and being arranged according to the rules of grammar, constitute a language.

Languages are more or less harmonious, in proportion to the number of vowels or simple tones which it contains ; thus the Greek and Latin, among ancient languages ; and among modern, the Russian, Italian and Spanish are more agreeable than those of teutonic origin, as the French, English, German, Dutch, Swedish, Danish, &c.

Speech, considered as the means of communicating our thoughts, is the organ of our intellectual faculties : and herein constitutes the great superiority of man over the rest of the animated creation. He alone can express his feelings in appropriate language ; can accumulate knowledge in the storehouse of his memory ; can search for causes, and

distinguishing effects; and, above all, can judge and reflect upon the past, the present, and the future.

The third class of sounds produced by the voice is musical sounds, or vocal harmony.

Singing requires greater exertion than is used in speech, and the organs of voice are called into more varied as well as more powerful action. Thus the trachea is lengthened or shortened, by the stretching out, or drawing in of the neck; inspiration is accelerated, prolonged, or slackened; the larynx rises or descends; while the glottis is made to enlarge or contract, either by sudden and quick, or slow and gentle motions. Singing, therefore, consists of modulations of the voice; imitating, with varying rapidity, the different degrees of the harmonic scale; passing from grave to the acute, and from acute to the grave, in sounds which are appreciable by the ear, and regulated by the rules of harmony.

The powers of the human voice are very extensive, and vary remarkably at different ages and in different individuals. The characters of voices are distinguished by the names grave, acute, high, counter, tenor, base, falsetto, &c. We have already compared the voice to a musical instrument, in which the air is made to vibrate as in wind instruments: such, for instance, as the clarionet. In this a thin plate is made to vibrate, intercepting and allowing by turns the passage of a current of air, by which sounds are produced: this structure, termed the reed or anche, is fixed to a tube or body. If the plate is long, the sounds are grave; if short, acute, owing to the greater rapidity and strength of the vibrations in the short than in the long plate. The tube or body has no other influence on the sound produced, than upon its loudness or intensity: those which produce the loudest sounds are of a conical form, increasing in width towards their outer end: if the cone is inverted, a dull sound is produced; but if two equal cones are placed base to base, and adapted to a conical tube, as in the flageolet, the sound acquires fulness and power.

The larynx has been compared to different musical instruments by different physiologists. By Galen, to the flute; Dodart, to the horn; Ferrein, to the reed instrument; but it is considered at the present day to partake of the powers

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of both wind and stringed instruments, and capable of being regulated by vital action. The quantity as well as the force with which the air is propelled through the larynx, variously contributes to the loudness of the voice: these circumstances are regulated by the size and muscular power of the chest, the volume or size of the larynx, and the power of its proper muscles. In singing, the larynx acts the part of the reed, while the trachea answers to the tube: thus, in running up or down the whole scale of sounds, the neck and trachea are visibly shortened or stretched out.

Acute and grave sounds are produced by the motions of the rima glottidis, regulated by the tension of the vocal cords and their vibrations, as they are variously stretched by the muscles in the peculiar mechanism of the larynx. In grave sounds, Magendie observed in some experiments on dogs, that the air passed out through the whole length of the glottis, the ligaments vibrating in their whole extent. In acute sounds, only the posterior or arytenoid portion of the ligaments vibrated; and in proportion to the diminution of the opening of the glottis, so was the acuteness of the sound. The arytenoid muscles are those which principally produce these acute sounds, as is proved by the division of the superior laryngeal nerve which supplies them; and when divided, they establish a grave tone. It is therefore readily seen how much depends upon the consent of the muscular actions of the larynx, and the consent of the will, in exciting a due degree of tension and relaxation. A sound is readily produced in a larynx when blown into out of the body, and which will be similar to the voice of the animal to which it belonged, but different from that produced during life, in consequence of the want of that regulation which is produced from the tension of the vocal cords during life. Independent of these sounds, each individual has a particular tone of voice, which is readily detected by those who are accustomed to hear it. The same thing occurs among animals: in the same flock of sheep, each ewe and its own lamb are attracted by each other's bleating, and not by those of others.

The voices of women, children, and eunuchs are more acute than those of men, from the comparative smallness of

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the larynx : it becomes weaker also during illness, from the loss of power in expiration.

The whisper is produced in a similar manner by a weakened action, in which the sound is not more audible than that produced by the passage of the air in forced respiration."

We entertain a very favourable opinion of this volume.

IX.

MAINGAULT'S ILLUSTRATIONS OF THE DIFFERENT AMPUTATIONS PERFORMED ON THE HUMAN BODY; REPRESENTED BY PLATES DESIGNED FROM NATURE; WITH ALTERATIONS AND PRACTICAL OBSERVATIONS. By Wm. SANDS COX, Lecturer on Anatomy and Surgery at the Birmingham School of Medicine, and Surgeon to the General Dispensary. Folio, 8 lithographic Plates. London and Birmingham, 1831.

So many plates, etchings, lithographs, and copper-plates, bestrew our tables, that we scarcely know whither to turn to avoid them. Every day sees the birth of some production of this description. If the public buy them all, then happy are the authors : if not, the spectacle of unsuccessful candidates for fame or pelf, has not the effect of deterring others from entering the lists. Each, when he publishes *his* new work, declares that he does so to remedy an inconvenience generally felt, to supply a desideratum universally acknowledged. Yet still inconveniences and desiderata seem rather to multiply than diminish. The object of the present *porte-feuille* is the delineation of the several amputations of the upper and lower extremity. The execution is tolerably good, the aim is deserving of commendation. We cannot convey by words an idea of the lithography ; we need not attempt to notice the letter-press, which is explanatory, and little more. The surgical student will judge whether he can afford to purchase the work, to obtain the professional information which it offers.

X.

ELEMENTS OF SURGERY. By ROBERT LISTON, Fellow of the Royal Colleges of Surgeons in London and Edinburgh, Surgeon to the Royal Infirmary, &c. London and Edinburgh, 1831.

WITHIN the last few years, compilations, systems, manuals, and guides of all descriptions for the use of students, young and old, have multiplied beyond enumeration. If mind is on the march, it is encumbered, like our English armies, with a monstrous quantity of baggage and camp-followers. Yet, amidst much useless matériel, there is also much that is necessary, serviceable, and valuable. Our young aspirants to professional fame have only to climb the ladder, whose spokes are numerous and strong ;—their forefathers were compelled to clamber to the summit on deficient steps and frail support.

Mr. Liston has added his powerful assistance to those who are engaged in the laudable employment of disseminating surgical knowledge. Those who read may now acquire, for a sum which even poverty might spare, such learning as books can afford, such knowledge as may qualify them for entering on the observation of Nature herself. The cry has been that books are useless—the cry is, that they are omnipotent. They are neither. Practical knowledge, without book-learning, is barren, egotistic, fraught with prejudice, prone to unreasonable doubt, and too-yielding credulity. Book-learning, without practical knowledge, is vain, confident, subtilizing in discourse, in practice timid, wavering, versatile, and destructive. All men now confess the utility of books, and many perceive the true extent of their benefits. But we are not writing an essay on the times.

We should have taken notice of Mr. Liston's Elements of Surgery sooner, had we not been accidentally prevented from perusing them. As the work is thus avowedly elementary, it is not adapted for review or extended notice in a journal which is avowedly not so. We may offer a sample or two of the

matter and the style, in order that our readers may be enabled to form some conjecture as to what they may expect, if disposed to purchase. The following observations on the affections of the nose will suit us.

"Of Inflammation, Abscess and Ulceration of the Nose, and Cavities connected with it."—Inflammation may be excited in the nose by external injury, as a bruise, or fracture, or displacement of the bones. The acute symptoms are swelling and discolouration of the integuments, turgescence of the schneiderian membrane, which covers the septum naris and the turbinated bones, and consequent obstruction to the passage of air. Unless active measures are pursued, abscess follows, with greater swelling and obstruction; and extensive loss of substance, with deformity, may ensue. Unless the acute symptoms, the short duration of them, and the rapid supervention of tumour be considered, the swelling may be mistaken for pus.

The septum suffers more than other parts of the nose, from the concussion produced by a blow, and is in general more seriously affected by the morbid action which is induced. Matter is effused beneath the membrane, in one or both sides, usually in both, and tumours are thereby formed, which project into the cavities of the nostrils; when attentively examined, fluctuation is felt, and if the affection has existed for a considerable time, the abscesses are found to communicate with each other, the septum having been absorbed or necrosed at one or more points.—An individual received a severe blow over the extremity of the ossa nasi, and a slight wound was produced. The breathing soon became obstructed, by swelling in the nostrils, and great pain in the part was complained of. A large tumour formed on the septum, and completely filled the cavities; it was opened, and a great quantity of matter evacuated. The septum was destroyed by ulceration to a considerable extent, and a slight falling down of the middle of the nose followed. Such cases are of common occurrence.

Independently of any vice in the constitution, *ulceration* of the nostrils may be induced by injury, and proceed until great ravages are effected, if the treatment be not properly conducted.—A young gentleman playing at ball, was struck accidentally on the nose with the flat part of his companion's hand. Inflammation took place, externally and internally, and the passage of air was obstructed; abscess formed, and the matter was evacuated spontaneously; extensive ulceration ensued; the cartilage and bone became affected, portions of them separated, and a bloody fetid sanguis flowed from the nostrils. All the cartilaginous, and part of the bony septum were destroyed; the morbid action ceased after having continued for a long time; but the organ was curtailed, sunk on the face, and altogether much deformed.

The alæ, as well as the septum, may suffer from external injury, indeed the whole cartilaginous part of the nose may be destroyed.

Incited action must be subdued by abstraction of blood from the external parts or from the schneiderian membrane, leeches being applied in sufficient numbers, and repeated. Should suppuration not be prevented, the abscess, particularly when internal, must be early opened: the surgeon is to blame, if the patient, having been under his care from the first, sustains any deformity. If abscess has formed on both sides of the septum, each must be opened freely; afterwards hot fomentations are to be used, and the cavity should be frequently cleansed by the injection of a bland and tepid fluid.

Intractable ulceration of the nostrils, is often induced by trifling irritations or injuries in constitutions, either originally unsound, or rendered so by imprudent conduct; slight blows on the prominent part of the organ produce swelling with discolouration, and that is followed by abscess and ulceration. Internal ulceration is frequently caused by the continued use of snuff, or the presence of other irritating matters,—by irritation communicated from diseased gums or alveoli, or from decayed or crowded teeth, particularly the inci-

sors of the upper jaw—by stumps in any part of the mouth, or the pivoting of artificial teeth on them—by introducing the dentist's perforator, with a view of destroying the nerve of a tooth. I have seen ulceration, and loss of substance, arising from each and all of these causes.

The ulceration occasionally commences, even in young subjects, in a wart or fissure on the integuments of the nose or upper lip; it thence extends to the alæ and floor of the nostrils; the cartilages, and even the bones, are destroyed; the discharge is thin, acrid, bloody, and foetid, and the action is with much difficulty controlled. The disease is met with of various degrees of severity and malignancy; it may cease spontaneously, may appear to be arrested by constitutional and local treatment, or, resisting all means employed against it, goes on consuming portions of the face, both hard and soft; destroying the nose, lips, and eyelids, and ultimately the bones in their neighbourhood. Horrid cases are occasionally met with, in which scarcely the vestige of a feature is discernible—the patient is nourished, and life, which cannot be enjoyed, is protracted by food conveyed over the root of the tongue, through funnels or tubes. *Noli me tangere*, and *lupus*, are names applied to the advanced stages of the disease.

Ozæna, which denotes the internal ulceration of the nose, or rather the discharge indicating such, is generally of long continuance. The discharge is at one time profuse, at another scanty; sometimes it ceases almost entirely, but the accompanying foetor, of a most disgusting nature, is still perceptible on approaching the patient, or coming within the influence of the air expired over the diseased surface; the stench is particularly offensive when portions of bone are separating. The bones may die either from inflammatory action in them running high, or from being uncovered and deprived of support by ulceration of the investing membrane. In many cases, the disease is not arrested till the cartilaginous and bony septum, the turbinated bones, the hard and soft palate, and frequently the al-

veoli, are completely destroyed. The patient, if he live, is in a miserable plight;—his countenance is deformed and ghastly: the situation of the nose is occupied by a large dark and foul sore; the discharge is profuse and weakening; the expired air is as a pestilence to himself and those around; speech is almost unintelligible; breathing is difficult; the strength is gradually exhausted, and the spirits sink under the harrowing impression of misery. All these ills result more frequently from the injudicious employment of mercurial preparations than from any other cause. In almost every instance, the predisposition to such frightful ulcerations has been induced by the use of mercury, and can readily be traced to it. Exposure to atmospheric changes, during or after the exhibition of mercury, may render the mucous surface and the coverings of the bones more susceptible of the disease; that medicine may be given with the utmost precaution, but for long after the constitution cannot shake off its influence; and too frequently more of the poison is administered for disease produced by it. Ulceration of the tonsils, and other parts in the fauces, often co-exist with disease of the nostrils.

Ulceration of the nostrils is arrested with difficulty. It cannot be expected to cease till dead parts have separated, become loose, and fall out, or are removed by art. Portions of the bones, forming the floor of the nostril, can often be removed, when dead, through ulcerated apertures in the palate; whilst others are brought away through the nostrils, there being generally sufficient space allowed for their discharge—the nasal cavities being laid into one by destruction of the columna, and more or less of the septum. Occasionally the ossa nasi, or parts of them, escape through an opening in the superimposed integuments; sometimes they cannot be discharged otherwise, as in the following case:—Matter had come to the surface over the nasal process of the frontal bone, an incision was made for its evacuation, sequestra were found loose, and some extracted; one was pushed down with the view of pulling

it through the nostril, but this was found closed from the effects of small-pox.

Various applications to the ulcerated cavities are employed. Injections of spirituous and aromatic lotions are used to wash away the discharge and correct the foetor, as diluted tincture of myrrh, tincture of sloes, a lotion of the sulphate of zinc, solutions of the chlorates of lime or soda, &c. Applications, soothing or stimulant, are made to the exposed sores according to their appearance and disposition. When the ulcer is of an angry and irritable aspect, it is to be touched lightly with the nitrate of silver, in substance or solution, and then covered with a bread and water poultice. Fowler's solution of arsenic is useful in some cases, when the object is to clean or destroy the surface; this is also effected by a slight application of the potass. Black wash sometimes agrees well, as also a liniment of olive oil and lime-water, with citrine ointment (three parts of the former ingredients to one of the latter), or the sulphate of zinc lotion. When the sore is very indolent, showing no signs of granulation, it may be touched occasionally with spirit of turpentine, either pure or combined with alcohol, and afterwards covered with an ointment composed of ung. cereæ and spir. terebinthæ; under this application ulcers often heal, after having resisted all others. But nitrate of silver applied gently, and repeated at the interval of two or three days, will, in the majority of cases, be found the most efficient remedy. Constitutional treatment must not be neglected. When the disease cannot be traced to mercurial action, small doses of the muriate of mercury are allowable when excitement is required. The arsenical solution given internally sometimes produces good effects. In foul internal disease of the nostrils with cachexia, no medicine exerts so beneficial an influence on the general health and local disease, as sarsaparilla, exhibited either in decoction, in extract, or in powder. The solid extract is the preferable form, and is given either amongst milk, in substance as a bolus, or dissolved in water or in distilled aromatic water."

Two parts, or volumes, have been already published, the third and concluding one is "in active preparation." They will comprise a system of surgery, culled from personal experience, and from the recorded practice of the best surgeons. In the second part there is a succinct account of the diseases of the eye. Inflammation of the bursa over the olecranon process, is a frequent occurrence, yet we constantly see it mistaken by practitioners. It is right to put them on their guard, which we may do by a short extract from Mr. Liston's work.

"The *Bursa* over the *Olecranon Process* is liable to enlargement, by gradual accumulation of the secretion, in consequence of habitual pressure on the elbow. The contents are either serous or albuminous, usually the latter, and the swelling is indolent. But acute swelling not unfrequently takes place in this situation, from external injury; then the tumour is formed rapidly, there is heat and pain in the part, and the integuments are discoloured around: in such cases the bursa is filled with pure blood, or with a seropurulent and bloody fluid. Inflammation of the bursa often follows bruises and lacerated wounds, and is apt to extend to the forearm and arm; causing extensive and deep effusion, great tension of the parts, and severe constitutional disturbance.

In the chronic cases of bursal enlargement, pressure is to be avoided; and by the permanent application of a gum and mercurial plaster (emplastri gummosi—emp. hydrargyri—ā part. æq.)—absorption of the fluid may in general be procured—the swelling disappearing as gradually as it arose. If the collection is large and obstinate, repeated blistering may be had recourse to; and if that fail, a seton may be passed through the cavity. But the last-mentioned practice is sometimes followed by more action than is desirable, inflammation of the surrounding cellular tissue supervening, and abscesses forming, perhaps extensive. When the collection is purulent, a free opening is to be made into the bursa, and the case treated in other respects as a common abscess. If indolent swelling of the cellular tis-

sue, and spongy thickening of the synovial surface of the bursa, remain after incision, the caustic potass should be applied. In extensive and acute inflammation spreading to the surrounding parts, free incisions are required, along with proper constitutional treatment."

We are induced to notice Mr. Liston's treatment of dissection-wounds, for a reason which we will state, when we have put our readers in possession of the treatment in question.

"Wounds received during dissection occasionally have unpleasant consequences from the absorption of putrid animal matter. The absorbents leading from the wounded part become swelled and painful, and in slight cases there are shivering and general indisposition for some days. The more violent symptoms arise from examining bodies which are rather recent, and in which putrefaction is just commencing, and very frequently from inspecting the bodies of females who have died of puerperal diseases. The absorption may take place from punctures made by scissors, the point of a knife, or spiculae of bone, or from old scratches, or chops by the side of the nail or on the hand. There is little or no danger from an open and bleeding wound, as by the flow of blood the part is completely cleaned; it is only from slight punctures that untoward symptoms need be apprehended. Effects similar to those resulting from wounds in dissection often occur in nurses and others who have pricked themselves with pins while washing foul clothes. The symptoms already mentioned are soon followed by others more severe: shivering continues, and the patient is seized with vomiting; the part affected, and often the greater part of the arm, become red and much swollen, and the cellular tissue is infiltrated with serum; abscesses form at various points, often in the axilla, and purulent matter is diffused throughout the unhealthy cellular tissue, which in many instances sloughs, and gives rise to extensive sores. Typhoid symptoms soon appear, and in the more aggravated cases speedily prove fatal. When such local and constitutional symptoms arise,

it will generally be found that the patient was of a broken-up constitution previously to the infliction of the wound; did they solely depend on the inoculation of virus, they would be of very common occurrence, considering that wounds are so frequently received during dissection; but it is seldom that any unpleasant symptoms follow such an accident. In all cases, however, it is prudent to adopt measures in order to prevent absorption of the virus. With this view the wound is made to bleed by means of pressure or suction, and by the latter method the exposed surface is most effectually purified; afterwards nitrate of silver may be applied to deaden the surface, and protect it by an eschar. If such means be unavailing, the after symptoms must be encountered as they appear, local inflammation subdued, tension relieved, abscesses opened, sloughs removed, &c. General bleeding is seldom admissible, but purgatives and antimonials will prove beneficial at the commencement; afterwards the strength is to be supported, and, if the patient be much reduced, stimulants are to be liberally administered."

The point on which we would offer a remark, is the recommendation of Mr. Liston to apply the nitrate of silver or some other escharotic to the wound. We have seen this done several times, and in almost every instance with bad effects. Inflammation of the finger or the hand has succeeded, and an angry, irritable, and more or less intractable sore has been left. We believe the best local treatment to consist in the employment of suction, early and careful washing, poultices if any inflammation should occur, and early opening if abscess or merely a pustule should succeed.

It is unnecessary for us to pronounce an opinion on Mr. Liston's work. Its manner will be learnt from the extracts we have given, its matter can only be appreciated by a careful perusal. We trust that it will meet with the success which it deserves.

XI.

OBSERVATIONS AND EXPERIMENTS ON
A NEW MODE OF TREATING FRACTURES OF THE LEG AND FORE-ARM;
ESPECIALLY COMPOUND FRACTURES.
By WILLIAM BEAUMONT, M.R.C.S.
and Surgeon to the Farringdon Dispensary. Octavo, pp. 31. Longmans,
1831.

THE author of this pamphlet informs us that, it was after making a series of experiments for the purpose of examining the processes by which union of fractured bone is effected, that he conceived the possibility of greatly accelerating the reparation, and diminishing the danger of compound fractures—except where there was extensive laceration of the soft parts. He conceived that, by maintaining in compound fractures a continued exclusion of the atmosphere from the broken surfaces of the bone, union might proceed, *ceteris paribus*, as rapidly as in simple fractures, and with almost as little danger. The common experience of surgeons has decided that a compound fracture is infinitely more dangerous than a simple one, and much of the mischief must undoubtedly be owing to the admission or contact of the atmosphere. But we do not consider it as proved, notwithstanding, that this accounts for the whole difference in amount of danger between the species of fracture alluded to. Much must be attributed to the proneness of wounded skin and cellular membrane to inflammation. This is by the way.

The efforts of surgeons have long been directed, in the treatment of compound fractures, to the speedy healing of the external wound. The varieties of apparatus for fractures are endless, the principles of treatment generally recognized at present are simple and few. They enjoin perfect repose, light dressings seldom disturbed, moderate antiphlogistic treatment. The success obtained by these means is far from inconsiderable, yet it must be acknowledged that cases do occasionally terminate unfortunately. Ingenious persons have attempted to improve upon

the ordinary treatment, and as the healing of the wound is the great desideratum, they have conceived that by enveloping the limb in an impermeable case, they might obviate the injurious consequences of the breach of continuity in the soft parts. On this principle it is that some surgeons apply varnish to their dressings, that Baron Larrey coats his dressings with a composition and leaves them untouched for several weeks, and that our author recommends the employment of plaster of Paris. By means of a cast composed of this substance the limb must be maintained in one position, the external air is prevented from obtaining access to it, and steadiness and repose are ensured.

"The advantages, then, which I may state this practice to possess over the employment of splints, are, 1st, the maintaining of an unremittingly motionless state between the portions of the broken bones, notwithstanding any moderate movement on the part of the patient: 2dly, the consequent liberty of changing his position, as often as may be necessary to relieve the weariness of a long continuance in the same posture; which change of position, would, in all probability, prevent any ulceration, or sloughing of the integuments of the back or buttocks, when from excessive debility, such an occurrence may threaten to take place: 3dly, the better and complete preservation of the proper length of the limb, in cases where the fracture runs very obliquely across the bones; and also the certainty of preventing any eversion, or inversion, or crookedness. Lastly, there is in thus treating compound fractures, the advantage of so perfectly excluding the atmosphere from the injured parts, as to render the process of union as rapid as in simple fractures. The great danger too, almost invariably attendant upon compound fractures, is also much diminished; if I may so judge from the little apparent suffering of the animals on which I made experiment, as to this mode of treatment. It is seen, moreover, that where there is much constitutional disturbance, the reparation of a compound fracture, or other severe injury, does not proceed

with any degree of rapidity, if it proceeds at all; wherefore, as the reparation of the compound fractures, which I have treated according to the method I propose, did proceed with rapidity, one must needs conclude, that the said compound fractures were not accompanied by much constitutional disturbance: so that the mode of treatment, by which the curative processes are most expedited, must also be that by which the danger is most diminished. Now, with the exception of those cases of compound fracture, in which the soft parts are so much bruised, or otherwise injured, as to suppurate, or slough, to great extent; or of those cases, in which a something may happen to destroy life, not necessarily connected with compound fracture, I have not the least doubt, that with the exception of such cases, compound fractures, at least of the leg and fore-arm, may, in general, be made to get well, as rapidly as simple fractures, and, I believe, with almost as little danger."

In order to ascertain the practical value of his method, our author performed some experiments on rabbits; he relates the particulars of two. In the first, the tibia of the rabbit was broken, and both ends of the bone were pushed through the skin, making a large and rough wound. The limb was put up in plaster of Paris, in a way that will presently be described, and the plaster was removed at the end of three weeks and four days. The wound was not quite healed, a small ulcer remaining, through which might be seen a part of the tibia. There was about the ulcer some inodorous, semi-fluid matter, resembling pus deprived of its more liquid parts; a strong and seemingly osseous union had taken place. In two or three days more, the rabbit was able to bear pretty well upon its unsupported broken limb. In the second experiment, the right radius and ulna of a rabbit were fractured, and extending down to the fracture, was made with nitric acid a slough, half an inch long, and one-third of an inch broad, through which slough the broken end of the proximal portion of the bones was pushed. The limb was then put up as in the other

experiment. Three weeks and four days after the fracture the limb was examined. An abscess had formed, burrowing from the fracture, half way up the humerus, where it had made for itself an opening, through which the bone could be seen separated from the subjacent muscles. Union had not taken place, the wound in the soft parts had not healed, and the limb was again put up as before. At the expiration of eight weeks an unyielding osseous union had taken place, the wound had healed, and the rabbit could bear upon the limb. Such are the experiments and experience by which the plan of treatment is supported. We shall now let our author explain its details.

" Supposing the case of a compound fracture of the tibia, (the fibula being also broken,) supposing the fracture to run very obliquely across the tibia, and the muscles of the limb to have drawn the one portion of the bones considerably over the other: under these circumstances I would advise the following mode of putting up the fracture. The patient should be placed upon his side, with his broken leg and adjoining part of the thigh resting upon a horizontal plane, the outer, the fibular side of the limb being downwards, and the leg bent upon the thigh nearly at a right angle.

A board, about thirty inches long and eighteen broad, which I have had made to place a fractured leg upon during the incrusting of it in plaster of Paris, has a staple fixed at one end, and at the other, a strong piece of iron projecting longitudinally about nine inches, to which is attached an apparatus of pulleys, similar to that used to reduce dislocations; two pulleys, however, need only be employed, instead of four. In that part of the board, along which it is intended the limb should lie, there are cut several transverse grooves, about three-quarters of an inch deep, and nearly two broad; they are not more than an inch apart, and from three to four inches long. By these grooves, the plaster of Paris, when poured upon the limb, can pass beneath it, and connect below as well as above, the incrustation on one side with that on the other.

A bandage should be put upon the limb from the very extremity of the toes to near the middle of the thigh; which is for the purpose, both of making an equal pressure on the whole of the limb, and also to prevent the plaster of Paris from sticking to, and irritating the skin. The eighteen-tailed bandage should, as usual, be employed, but in order to guard against any derangement of its folds by the force which may be necessary to extend the limb to its proper length, I would advise, as each tail may be laid over its corresponding tail, to sew them firmly together.

In the putting on of this bandage, the greatest attention will be requisite that a moderate and equal pressure be made by every part of it, or, at all events, that the upper part shall not make more pressure than the lower.

Beneath, and also above the limb, that is, along its fibular and tibial sides, should be placed between it and the bandage, several strips of soft linen or flannel, from three to four inches broad; they will form pads better adapted to the purpose than almost any other.

The bandage should, at first, be put on from the toes to an inch or two above the ankle; and a similar bandage from the head of the tibia to a few inches above the knee. A sort of leather cap which I have had made to fit the ankle, and another to fit the knee, should then be buckled round these parts. The knee is to be made fast to the staple of the board by loops attached to its leather cap; and that covering the ankle, is to be fixed to the cord passing through the pulleys. By these means, extension may be gradually made, and as nearly as possible in the direction of the axis of the tibia: the one portion of which having been drawn as far off the other as should be, the cord is to be made fast in order to retain it so. Having thus extended the limb to its proper length, the distal portion should be placed and held, in a position neither everted, nor inverted, nor bent upon the proximal portion.

The edges of the divided integuments are now to be drawn accurately into contact, and maintained so with strips of adhesive plaster; which with the

surrounding skin should then be thickly overspread with some tenacious, unirritating substance, such as will serve to exclude the atmosphere from that which it may envelop: the whole should then be covered with a piece of kid, or chamois leather, the under surface of it having also been spread with the same substance, in order that it may closely attach itself to the parts beneath.*

The eighteen-tailed bandage should now be continued up the leg as far as the knee; which being completed, there should be fixed to the board on which the fractured limb is lying, that which sculptors call a wall, a sort of raised border, from three to four inches in height, placed as nearly parallel as possible to the outline of the leg, about an inch from it, and extending from the toes to four or five inches above the knee.

Sufficient plaster of Paris to fill the hollow between this border and the limb, is now to be mixed with water, and poured into the hollow, so that an incrustation, about an inch in thickness, may cover the whole surface of the limb.†

Previously to pouring the plaster of Paris around the limb, the bandage covering it, and every part with which the plaster can run in contact, should be thoroughly wetted, so that they may not adhere: and in order that the caps buckled round the knee and ankle, may afterwards be withdrawn, their upper

* "The following composition I have found to adhere to the skin with great tenacity, and without irritating it: it may also be melted by a very low degree of heat:—

℞. Picis Nigræ, ʒij.

Cerae Flavæ, ʒj.

Resinæ Flavæ, ʒij.

Terebinthinæ, ʒss. Ft. Emplast."

† "Great care must be taken that the plaster of Paris used, does not contain a large proportion of lime, as such, of course, gives out a considerable degree of heat when wetted. In mixing the plaster of Paris, it should be poured gradually upon the water, and as much of it as the water can liquefy."

parts should be covered with some plastic substance of sufficient depth, that the incrustation may not rise above it.

The reason that I would not have the plaster of Paris attach itself to the bandage around the limb, is that that circumstance would give rise to great difficulty in the removing of the incrustation, should its removal happen to be necessary.

As soon as the incrustation shall have acquired sufficient firmness to allow the limb to be loosened from the board on which it lies, the leather caps covering the knee and ankle should be taken off these parts, and the hollows left by their removal should be filled with plaster of Paris, as well as those deficiencies in the incrustation which will be found on the fibular side of the limb.

Above the knee, where the incrustation terminates, its inner edge should be pared away, in order that it may not press upon, and produce ulceration of the integuments. The space thus left between the incrustation and the skin should be filled with some of the aforesaid composition of pitch, wax, &c. which, by adhering to the skin and also to the incrustation, will prevent the possibility of any communication between the atmosphere and the injured parts.

Should it become necessary to remove a portion, or the whole of the incrustation, it may be done, without disturbing the limb, by making, with a fine saw, three longitudinal cuts from one end to the other of the incrustation, and nearly through it; these cuts should be equi-distant from each other, that is, there should be contained between any two of them one-third of the circumference of the limb. After this, by forcing a broad chisel into the cuts, the incrustation may readily be broken into three longitudinal portions of equal width: the whole can be removed, or the limb may be still supported by that portion which covers its fibular side.

As a long continued state of inaction will cause the muscular part of a limb to shrink, it may be right, after ten days or a fortnight from the putting up of a fracture, to remove so much of

the incrustation from the knee to the ankle, (leaving, however, sufficient to retain the limb in *statu quo*,) that one may be enabled to tighten the bandage in those places where, from a diminution in the bulk of the limb, it may have become loose; which being done, the incrustation should again be made perfect."

It is an ungracious thing opposing the proposition of an ingenious man, yet we do not think that Mr. Beaumont's will ever be generally acted on. There are many objections to placing a fractured limb in an unyielding, impenetrable case, and allowing it to remain in it without examination for a long period of time. In the great majority of cases of fracture much swelling follows the injury, and that seldom subsides under the lapse of a week or ten days. We are sure, from experience, that any unyielding bandage or case applied in the first instance must be precarious, if not decidedly injurious; and, if not applied at first where is its advantage? Compound, aye, and occasionally simple, fractures are liable to be followed by low, insidious, and formidable inflammation of the cellular membrane, for which reason it is pleasant to have the power of seeing a limb without disturbing it. This cannot be obtained when an unyielding case is employed. It may be said that this would prevent the occurrence of inflammation, but it is problematical; in the second rabbit experimented on, an extensive abscess diffused itself over the limb. Independent of these considerations, and of others connected with the dressing of the wound, we may venture to express our hesitation in admitting that the position and apposition of the fractured bones must necessarily be so good as Mr. Beaumont supposes.

In reply to these objections we have, practically speaking, the results of the two experiments on rabbits. With respect to such we would observe, that they are far from satisfactory, for it is notorious that the lower animals do not suffer from mechanical injuries to the same extent as man. Again, we are not clear that the rabbits would not have done as well, or better, under

other treatment than that actually employed. Perhaps it would be well if surgeons would put Mr. Beaumont's proposal to the test of practice, remembering that a few cases can never determine the value of any mode of treatment.

XII.

NEEDLE SWALLOWED, SUBSEQUENTLY FORMING THE NUCLEUS OF A CALCULUS, AND EXTRACTED BY OPERATION.*

Needles have frequently been said to take strange and circuitous routes in the human body. Many of the cases must be looked on as apocryphal, but the following is indisputably authentic and trustworthy. It is related by Mr. Logan, of Lanark, and being short is scarcely susceptible of abbreviation.

" On the 29th January, 1830, Anne Wilson, aged 22, a servant girl, of a robust habit and good constitution, residing in the village of Kilcadzow, three miles north of Lanark, having gone to bed, with a large worsted-needle in her mouth, swallowed it during her sleep; next day she had pain in the hypogastric region, when recollecting to have had the needle in her mouth when she went to bed, and as she could no where find it, she attributed the pain to its presence in her stomach. Three days afterwards it had passed the pyloric orifice, and gained the small intestines, in which situation it seemed to have remained for a length of time, as in May succeeding, when she first consulted me, she complained of permanent pain, a little below the umbilicus on the left side; there was at this time no vesicular irritation, and she menstruated regularly, until within two periods of the extraction of the needle. I did not again see her till January, 1831, but in the previous autumn she had complained of great pain in the situation of the bladder, accompanied with frequent calls to micturition, and passed a stone the size of a

horse-bean. In January, 1831, the family attendant, Mr. Bouglas of Carluke, sent her to me, desiring an opinion. By careful examination, I found, that the point of the needle had entered the fundus of the bladder, on the left side, and being pushed on, had perforated the parietes of the opposite side, over the right acetabulum. The needle had formed a nucleus for the attachment of a calculus, of considerable size, of a lobulated form, and having its larger extremity towards the orifice of the urethra. At this time, she could not retain her urine above two or three minutes, which was passed with excessive pain, and was deeply tinged with blood, coagulating when cold. Introducing a pair of strong dressing forceps, I grasped the needle by a part free from any calculous incrustation, close to the mucous coat on the right side, and endeavoured, by pushing the whole backwards, to free the point, and bring it into the urethra; but this could not be effected by all the force which it was prudent to exert, on account of the long irritation having thickened the coats of the bladder, and produced such a diminution of its capacity, as to grasp the calculus on all sides. Had this succeeded, the calculus might have been crushed, and the whole expelled without incision.

Being foiled in this attempt, we determined on cutting into the bladder, through the urethra. Eight leeches were applied over the pubis, and a gentle saline purgative administered. On the following day, the patient being secured in the usual manner, with the assistance of Mr. Bouglas, I passed a director into the bladder, previously injected, along which a slightly curved bistoury was run, making a lateral incision upwards, towards the left ascending ramus of the pubis. The finger of my right hand was then introduced, and, pushing gently but firmly upon the calculus, the point of the needle was disengaged by the left hand, and brought into the opening; the forceps were then applied, but owing to the size of the calculus, it could not be extracted without enlarging the wound, which must have endangered the establish-

* Glasg. Journ. No. xvi. Nov. 1831.

ment of permanent incontinence of urine. The calculus being of a friable nature, was crushed by the forceps, the needle withdrawn, and the fragments brought away by the scoop. The bladder was then washed out, an elastic gum catheter introduced, and the patient put to bed. In the evening, twelve ounces of blood were taken from the arm, and leeches applied on the accession of any inflammatory symptoms. The bowels were kept open and occasionally glysters administered, accompanied by warm fomentations. The wound suppurated on the 8th day. On the 22d day she was able to sit by the fire and move about a little; she can now retain her urine two hours, and passes it by a voluntary inclination, offering a good prospect that there will be no permanent incontinence."

XIII.

M. DELPECH ON VARICOCELE.*

THE subject of varicocele has been studied with some attention in this country, especially by Sir Astley Cooper, who has communicated much useful information on its causes, nature, and treatment, in his splendid work on the Diseases of the Testis. Yet still our remedial measures are imperfect, and though we may palliate, we can seldom cure. Varicocele is frequently productive of much inconvenience to the patient. M. Delpech, for instance, asserts that he has known military officers obliged to abandon their profession in consequence. Varicocele also tends to occasion wasting of the testis, partly, we suppose, from the pressure exercised upon the organ and its nerves, but principally from the imperfect circulation which it must create in the spermatic vascular system. We need scarcely allude to the diagnostic marks of the disease, but we may be permitted to mention its more frequent occur-

rence on the left side, its subsidence under steady pressure whilst the patient is in the recumbent posture, and the return of the tumour when the patient rises, although sufficient pressure is made on the abdominal ring to prevent the egress of a hernia.

With respect to the atrophy of the testicle M. Delpech remarks that it frequently exists to some extent, when the varicocele is not severe, and when careful examination is necessary to detect it. On reducing the varicocele in such cases by steady pressure, the testicle itself seems to disappear also, leaving little but its membranes and vessels behind, a circumstance that, on superficial examination, would hardly be discovered. What is remarkable is this, that when the disease had been relieved by the obliteration of the varicose veins, the size of the testis became gradually restored, and with the size the functions. The pain felt in cases of varicocele is not in the testicle itself, but in the nerves of the spermatic cord. M. Delpech relates five cases in order to display his method of treatment, and to elucidate the history of the malady. We shall briefly mention some of them.

CASE 1. *Varicocele—Ligation of the Varicose Veins.*

J. M., æt. 43, a shepherd, was admitted into the Hospital of Montpellier, with varicocele on the left side, as large as two fists when the patient had been for some time in the upright posture. The pains in the loins were so severe as to prevent him from following his occupation. The testis was wasted, the venereal appetite impaired, and the patient would willingly have submitted to castration. M. Delpech adopted a less severe operation.

The patient being placed upon his back, an incision two inches in length was made near the inguinal ring, parallel to the cord, and over it; the cremaster and its aponeurosis were divided, and the parts composing the cord exposed. The two dilated veins were very apparent, they were raised separately, under each was passed a piece of thick amadou, and over this each vein was secured by a ligature. The size

* Memorial des Hôpitaux du Midi.
No. 24.

of the scrotum instantly increased, and the dilated veins formed larger knots below the ligatures. The wound was simply dressed, a poultice and suspensory bandage applied, blood taken from the arm, and the antiphlogistic regimen enjoined. Fever followed, with lumbar pains and enlargement of the scrotum. The fever was subdued by the antiphlogistic treatment, but an abscess formed in the scrotum, and was opened. On the 3d day, the amadou and ligature were removed from the veins. In some of these the blood had become coagulated below the ligature, others were "inflamed and mortified," and had occasioned the abscess. No further bad effects ensued, and on the 20th day the wounds were healed, and the scrotum reduced to its natural size. So early as the 12th day the patient had begun to experience erections, and, on the 15th, the testicle had acquired perceptible increase of size. The patient left the hospital on the 40th day; the testicle being even larger than its fellow, and the venereal desire regained. When seen four years afterwards he was married, had children, and presented no trace of varicocele.

M. Delpech concluded, from this case, that his method of tying the spermatic veins was improper. With our present experience, we need scarcely adduce arguments in support of M. Delpech's supposition.

CASE 2.—*Varicocele—Operation—Purulent Deposites in the Liver.*

A young officer of infantry was affected with varicocele of the left side, and suffered so much pain and inconvenience, that he expected to be under the necessity of abandoning his profession. He had formerly suffered from intermittent fever, his complexion was sallow, his form spare. Under these circumstances he applied to M. Delpech, who performed the operation. The incision was smaller than in the former case, and the piece of amadou larger and stronger, in order that the constriction of the ligature might be slighter. On the second day the ligature was cut, and removed with the amadou. The veins formed a full and solid cord, and

coagulation had taken place in them below the ligature; the lumbar pains had ceased. On the 12th day the wasted testis had regained some size, and there were erections of the penis; on the 18th, the wound was cicatrized, the cord diminished in volume, and the testicle increased.

On the 24th day the patient was attacked with a rigor and attack of fever; his skin had assumed a slightly yellow tint. On the 25th and 26th days there were two attacks of fever, with rigors, thirst, and depression, but without any local pain or symptom. Quina was prescribed on the 26th, but during that day and night there were three attacks of fever, and in the evening of the 28th the unfortunate patient died.

Dissection. The cicatrix of the wound in the groin was firm. The cavity of the spermatic veins was obliterated, and they were solid and filled with a firm, adherent clot. There was no phlebitis, nor inflammation of the peritoneum. The testicle was in a great degree restored, redder than natural, slightly "infiltrated," but otherwise healthy in structure. The liver was enlarged, with prominences here and there. Under each of these prominences was one or several *foyers* of scrofulous tubercles, of different degrees of consistence, for the most part in a state of softening. A great many abscesses existed deeply in the substance of the liver, and in their neighbourhood the organ was inflamed.

M. Delpech thinks it clear that the patient died of chronic hepatitis. We cannot but suspect, from the sudden access of the symptoms, and from their character, that these abscesses were in reality specimens of those purulent deposits, so frequent after operations and injuries. We acknowledge that, out of the many cases of this description which we have witnessed, we never had an opportunity of observing one in which the original wound was *perfectly* healed prior to the appearance of the visceral abscesses. This may be an argument against their identity with the abscesses in the present case, but we may remark that we are yet too imperfectly acquainted with the laws that regulate their ap-

pearance, to consider it a conclusive one, when set in opposition to the symptoms and cadaveric alterations.

CASE 3.—*Varicocele—Operation—Secondary Hæmorrhage—Cure.*

The subject of this case was a commercial traveller, æt, 26, with very large varicocele on the left side. The incision was carried lower than in any of the former cases, and the patient would not submit to the quietude enjoined him. Inflammation and swelling occurred, the amadou and ligature were buried and concealed by it, and on the 6th day it was necessary to put the patient to much pain, and to use many endeavours before these foreign bodies could be removed. Some arterial hæmorrhage followed, and was not subdued by pressure applied upon the part. M. Delpech then adopted the following expedient. A brass pin, of some dimensions, was passed under the artery, and some pieces of amadou being then placed upon the vessel, a waxed thread was twisted under the two extremities of the pin and over the amadou, in the form of the figure ∞ . The bleeding was thus stopped, the pin was taken away in three days, and nothing further of consequence occurred. On the fortieth day the patient departed perfectly cured.

M. Delpech was now led to imagine that he might modify the operation with advantage, and in the succeeding case he did modify it accordingly.

CASE 4. A cook, æt. 26, had laboured under varicocele on the right side for eight years. The pain was very considerable, and M. Delpech operated upon him. An incision, an inch in length, was made about an inch below the inguinal canal, in the direction of the cord—the varicose veins were exposed, seized with the forceps, and separated by the nails from the surrounding parts. A strip of amadou, half an inch in breadth, was then passed under the vessels, and its extremities brought out at the wound, and secured there by adhesive plaster. Thus there was no ligature upon the veins; which were merely isolated for a small

space from the surrounding parts, and left in contact with the amadou. On the 4th day the veins were red externally, manifestly choked by the adhesive inflammation internally; there had been little swelling or inflammation of the parts around. The amadou was withdrawn. The success of this operation was complete, the cavities of the veins becoming obliterated, the disease cured, and the testis regaining its natural dimensions.

The fifth case need not be particularly related here. A small piece of amadou was employed, it became buried in the wound, peritonitis ensued, and, although the patient recovered, yet troublesome suppuration and a degree of risk were incurred.

M. Delpech thinks the employment of the amadou a great improvement in the method of procuring obliteration of the veins. He thinks it cannot be attended with risk of phlebitis, although section and ligature of the vein certainly are so. We saw fatal inflammation of the saphena vein brought on in an adult, by rough examination only, though it is proper to mention that the patient had formerly had an attack of inflammation of the same vessel. Phlebitis also occurs spontaneously; therefore, we see no reason why M. Delpech's operation must necessarily be unattended with danger. In this country surgeons shew an indisposition to meddle with varicocele, and we certainly do not meet with many cases in which the inconveniences are very serious. We have laid the gist of M. Delpech's memoir before our surgical brethren, in order that they may put his proposal to the test of their experience, if fit and proper cases should present themselves. By the way we may observe, that in one of the Parisian hospitals, the spermatic artery has been tied for varicocele, in order to effect the wasting of the testis. We should not expect much from this operation. Castration has also been performed, but on this we need say nothing. We again recommend M. Delpech's proposals and the result of his cases to the attention of our brethren.

XIV.

ENCYSTED ABSCESS OF THE BRAIN COMMUNICATING WITH THE VENTRICLES.*

Two cases of this description are reported by M. A. Portal, interne of the Hôpital St. Louis.

Case 1. A young man, ât. 36, was admitted into the hospital, on the 28th Jan. 1830, with phlegmonous erysipelas of the left fore-arm. He had fractured the bones six weeks previously, and had used the limb too soon. We need not particularize the treatment, suffice it to say that fluctuation became manifest, incisions were performed, and a great quantity of pus discharged from the neighbourhood of the articulation. Recovery was slow, abscesses formed near the elbow and in the axilla, some pulmonary affection supervened, and the wounds did not begin to cicatrize until the month of March. The suppuration now began to diminish, but the patient began to complain of some pains in the head more severe at night, and accompanied with slight shiverings; a little pyrexia, and slight indigestion. There was now a slight tendency to delirium occasionally, and the suppuration was of serous quality. He was however improving, having merely some pain in the head and stiffness in the affected limb, when he died suddenly in the night of the 13th of April.

Sectio Cadaveris. The thorax and abdomen presented nothing remarkable.

The membranes of the brain were very pale, the cerebral convolutions flattened, and, as it were, compressed. On raising the cerebral mass there was seen at the inferior and middle part, by the sella turcica, some greenish yellow fluid, and pus escaped from under the tunica arachnoidea. On making sections of the brain, a softened portion was discovered in the white matter, about an inch from the anterior lobe. This softening surrounded a rounded, hard mass, about the size of an egg, which proved to be a cyst filled with

pus, capable of being turned out with facility from the middle of the softened mass. The parietes of the cyst were a line and a half in thickness, and in consistence resembled an hypertrophied intestine. The internal surface resembled in appearance a mucous membrane, and presented small cicatrices, injected with numerous vessels. At the back of the tumour was an opening communicating with the lateral ventricle of the same side; this, as well as the opposite ventricle, was filled with pus, the septum lucidum being in part destroyed. The third and fourth ventricles contained pus also.

Case 2. A young man, ât. 30, presented himself at the Charité, on the 9th July, 1828. He had suffered for six weeks from violent pains in the head; the face was pale, soddened; the eyes weak, lack-lustrous, almost constantly closed, the conjunctivæ injected. The powers of motion and sensibility were perfect in the limbs, the replies to questions slow, but the intellectual faculties remained undisturbed, the appetite indifferent, the pulse not increased in frequency. Bleeding, sinapisms to the feet, &c. were prescribed by M. Lerminier, and apparently attended with benefit, for the patient was able to walk about the garden and enjoy himself. On the 15th he was suddenly attacked with violent pain in the head, the face soon afterwards became red, the eyes injected, he frothed at the mouth, and in six hours he died.

Sectio Cadaveris. The membranes of the brain were injected, especially towards the anterior part of the left ventricle, where the arachnoid and pia mater adhered to the substance of the brain. Beneath this was the cavity of an abscess, occupying a large part of the anterior lobe, and extending to the lateral ventricle into which it had penetrated by an irregular opening. The pus in the interior of the ventricle was mixed with a small quantity of serum. The cerebral substance was softened to the extent of two lines round the abscess, and some of the softened portion floated in the cavity. Below, the brain

* *Journal Hebdomadaire*, No. 7. Nov. 1830.

was indurated, the corpus striatum rendered more grey and more soft. There was nothing unusual about the thoracic or abdominal viscera.

The reporter conjectures that the suddenness of death was owing, in these cases, to the pus escaping from the abscess into the lateral ventricle. This may or may not be the case, but the facts are of interest in shewing the obscure character of diseases of the brain, and the caution to be exercised in the consideration and treatment of the most apparently trifling cerebral symptoms. We may here introduce a case related by Mr. Adams in the fifth number of the Glasgow Medical Examiner. It differs somewhat from the preceding.

"A.B. æt. 32, a muscular little man, had been subject to head-ache for about eighteen months, but did not apply for medical assistance until about six months previous to his death. His general health at that period was so much impaired, that he was unable to follow after his usual employment. He now rapidly lost ground; became paralytic; had constant convulsive twitchings of the left half of the face, with such difficulty of articulating that he was often unintelligible. He was carried off by general convulsions.

AUTOPSY.—In the substance of the posterior lobe of the right hemisphere, an abscess about the size of a pigeon's egg was discovered; and the inner table of the cranium in contact with the diseased part, was carious. No particular diseased appearance was observed in any other portion of the brain. The thoracic and abdominal viscera did not present any diseased appearance worth noting."

XV.

CASE OF ULCER OF THE RECTUM CURED BY SARSAPARILLA AND THE BOUGIE.

THIS case is communicated to the public by Mr. Lyle in the third number of the Glasgow Medical Examiner. All who have had the treatment of cases of ulcer of the rectum are aware of their

painful and troublesome character, but division of the ulcer generally effects a cure.

On the 9th June, 1829, Mr. L. visited Mr. S. a merchant, æt. 48, robust and active, but with countenance indicative of disease. He complained much of pain in the lower portion of the intestinal canal, chiefly on the left side of the rectum, $2\frac{1}{2}$ inches above the anus, which was contracted; pain permanent and agonizing, especially during and for some time after stool; faeces twisted, and never larger than an earth-worm; bowels habitually costive; any attempt to introduce the finger prevented by the violent spasmodic action of the sphincter ani. The disease had first appeared when he was between 18 and 20 years of age. Besides these symptoms he had laboured for 12 years under an inflamed vesicular eruption on the perineum, scrotum, and groins.

The integuments of the perineum were ordered to be fomented twice daily, the citrine ointment to be applied at night, and the dec. sars. c. to be drunk daily, with a wine-glassful of a purgative every morning. A tallow bougie about the size of a glyster-pipe was introduced every day, and on the 15th Mr. Lyle succeeded in passing the finger into the gut, and detected an ulcer the size of a shilling exquisitely painful, at the part formerly mentioned. The treatment was persevered in, substituting, on the 20th, a Plummer's pill for the decoction of sarsaparilla. The bougie was increased in size, and on the 25th of July the patient is reported as cured.

XVI.

MICROSCOPAL RESEARCHES ON THE BLOOD IN DISEASE. By M. DONNÉ.*

ALL the world is aware of the avidity with which microscopical researches have been carried on, in the investiga-

* Journal Hebdomadaire, No. 40. Tome vi.

tion of the intimate structure of the organs, tissues, and fluids of the human body. The blood has been chosen, par excellence, as the subject of experiment. We confess that we have hitherto derived little advantage, little useful knowledge, little amusement even, from the various microscopists. No two have looked through the same glasses, and consequently no two have seen the same things; their observations are as numerous as themselves. Yet, as chroniclers of passing events, we are bound to record any fresh inquiries of this kind, though our private opinion of their utility and value may be far from favourable. M. Donné has been examining with the microscope the composition of the blood in morbid states of the body. We shall state, as briefly as we can, the results at which he has arrived.

In many diseases the form of the globules is altered. In an individual in good health the globules of the blood are perfectly round, transparent in the centre, and of an equal diameter. In a person worn out by long illness, whose organs have undergone perceptible alterations, the globules are less numerous, smaller, deformed, and their general and regular equality is gone. M. Donné asserts the following facts.

1o. In the blood of a woman twenty six years of age, dead of gangrene of the lung, and the body emitting the odour of putrefaction, the globules were small and remarkably deformed.

2o. In the blood of a woman dead of puerperal peritonitis, the globules were less deformed than in the preceding instance, but they could not be clearly made out. The fluid effused into the abdomen presented a few, very deformed, globules.

3o. In the serum of the blood of a woman, who had suffered for some time from disease of the brain, and was bled on account of erysipelas, the globules were very small and few; the blood of the clot did not offer a very regular form.

4o. In the blood of a man who was bled for bilious fever with pneumonia, the globules were fine, and tended to become united together.

5o. Serum of a young girl affected with bilious fever:—globules well marked, not very transparent.

6o. Blood of a woman dead of dropsy;—globules in very small number.

7o. Blood of a woman dead of disease of the liver:—globules tolerable, but disposed to be deformed.

8o. Blood of a young man dead of acute peritonitis, treated by mercurial frictions:—globules very deformed.

9o. Blood of another young man under similar circumstances:—globules not possessing their natural form, and some amongst them very large.

Appended to the foregoing are some statements concerning the existence of animalculæ in animal fluids. We all know of the discovery, or reputed discovery, of animalculæ in the semen by Spallanzani, and many know that a subsequent physiologist has accurately described their motions and habits. M. Donné has ascertained that these animalculæ do not exist in the secretion of the prostate. M. Donné has discovered in perfectly transparent liquid contained in an ovarian cyst, some very small living animalculæ. They appeared composed of a series of rings, and the termination at each extremity was obscure. They swam slowly by bending their bodies alternately to right and left, and they were of so minute a size, as not to be more than one-tenth as large as the spermatic animalculæ. We can only say of these observations, that we hope they may be productive of some utility.

XVII.

CLINICAL LECTURES BY DR. PERRY ON BURNS AND SCALDS.*

It cannot be denied, that much discrepancy of opinion exists on the treatment of burns and scalds, that much uncertainty obtains in the minds of the less experienced members of the profession, and that much bad practice is

* Glasgow Journ. No. XVI.

the necessary consequence. As an instance of this we may mention a case which we lately witnessed. A child was severely and extensively burned, from his clothes having accidentally caught fire. He was taken to a chemist's and soased in cold water. When brought to the hospital where we received him, he was cold and shivering in his half-burned wet clothing. In spite of warmth and stimuli, the collapse increased, and in a few hours the child was dead. We have seen but too many instances of what we cannot but designate incompetence, in the treatment of these injuries; and, as the majority of mankind do not think for themselves, but shape their conduct by the precepts of others, we shall still be constrained to lament the indiscretions of practitioners, till the rules of practice are settled on a firmer basis and the principles of treatment more generally agreed to. It appears to us that surgeons have erred in looking on burns in too particular a manner. A burn, said they, is a burn, and it ought to be treated with heat or with cold, lotion or ointments, flour or cotton, as their fancies led them to imagine, or experience seemed to dictate. Yet surely all this is highly unphilosophical, and theory has been but the herald to empiricism. A certain quantity of caloric reddens the skin and produces a vesication, a greater quantity kills the cutis and it assumes a white appearance, a still larger amount kills other parts or tissues as well as the cutis, and a slough of greater or less depth is the consequence. Are all these conditions of parts adapted for one treatment, to be remedied by one agent or class of agents? Reasoning would seem to say no, and experience in judicious hands confirms its dictates. For our own parts, we have come to the conclusion that no one method of treatment is exclusively appropriate to all varieties of burn.

The author of the paper in the Glasgow Journal, to which we shall now direct attention, must, from his situation in the infirmary of a manufacturing town like Glasgow, have many opportunities of studying the effects of scalds

and burns. We are therefore induced to notice his opinions and record his experience for the benefit of our readers. After criticising Mr. Kentish's views, he makes the following remarks:

"It ought to be remembered, that the part generally injured by heat or fire is the skin; a texture liberally supplied with nerves, blood-vessels and absorbents, and these all defended and supported by the cuticle, which adheres firmly to every part, and derives its nourishment from the capillaries. Under the cuticle terminate the sentient extremities of the nerves, forming part of the reticular coat, and supplying the capillaries, thickly spread upon it, with the power of action. When heat is suddenly applied in an over degree, it easily penetrates the cuticle, preternaturally excites the nerves, and increases the action of the exhalent vessels, which throw out the serous fluid which they circulate so rapidly, that the cuticle which defends the extremities of the nerves, is quickly raised, and forms a blister, and if removed, the nervous papillæ are exposed, and sensation increased. The stimulus of the heat being now withdrawn, the capillary vessels having been over-excited fall into a state of atony or debility, and being unsupported by the cuticle, easily yield and become so dilated, that those which formerly only admitted pure serum now admit red globules, and from their distention, swelling, redness, and increased sensibility is the consequence; still the part is not deprived of life, but capable of being excited to healthy action. Or the degree of heat applied to the part may be so great, that the cutis vera shall be partially, or even wholly destroyed, or so far disorganized that it soon dies, and must be separated from the living parts; a process, which in a healthy state of the constitution, nature sets immediately about, leaving an ulcerating surface, which begins to heal around the edges, if the constitution is good and the treatment has been properly conducted, even before the eschar had been fully separated from the centre. Or, 3dly, The skin and subjacent parts may be so completely disorganized by the first injury, that it

becomes black and incinerated, and must be thrown off like any other eschar.

If the burn is extensive, and the shock to the system great, as it generally is in such cases, the power and action of the brain and vascular system, are so much diminished by the sudden exhaustion of the nervous energy, that the blood leaves the surface and extremities, and accumulates in the internal and larger vessels to such a degree, as to impede the action of the heart and lungs, producing dyspnoea, and sometimes an effusion from rupture of small vessels takes place, either upon the brain or spinal marrow; and in children, the congestion or engorgement of the vessels of the brain, unless attended to, frequently ends in serous effusion upon that organ. I have reason to believe, too, in some instances, where the circulation has become so languid that the pulsation could not be distinctly felt; that the blood had coagulated before death in the heart and larger vessels, by which circumstance, restoration by the exhibition of otherwise sufficient stimuli was prevented.

In other cases, where the apparent injury is not so great, the constitution may be so weak, that it is overpowered by the shock; the pulse is feeble, the extremities cold, the patient shivers, is restless, falls into a state of stupor, and sinks without complaining much of pain; or re-action may take place, accompanied with fever, and much constitutional excitement; on the subsidence of which, the patient may sink; this effect the more readily takes place, if too free recourse is had to the lancet, to subdue the excitement of the system.

It often happens that while portions of the skin and subjacent parts are so severely injured, as to be completely disorganized, the surrounding parts may have been only partially over-excited, and still having a portion of vitality, are capable of being acted upon by external stimuli, and consequently, in a state requiring a different topical application from the former; this is a point too frequently neglected in the treatment."

We conceive that, with much that is undeniable, there is some little specu-

lation in the foregoing quotation. On the withdrawal of the stimulus of heat, says Dr. Perry, the cutaneous vessels become debilitated, yield, and carry red blood instead of serum. Now a scald produces redness of the skin, which remains for some time. If the skin in this state be stimulated we frequently have vesications and the other consequences of inflammatory action: but if it be soothed by sedative applications the redness, heat, &c. for the most part pass away quietly enough. Can it be said that the capillaries were dilated and debilitated? if they were so, that debility was aggravated by stimulants, relieved by sedatives. Dr. Perry relates five cases, in order to shew the description of treatment applicable to the different varieties of burn.

Case 1. "A. B., a child about two years of age, was scalded over the face, neck and breast, with hot or boiling water; the cuticle was in various parts raised into blisters, but not abraded, except a part on the left side of the breast where the skin had been rubbed off in removing the clothes, the whole face and neck were of a high red colour; cold water had been applied in the first instance; twenty minutes had elapsed from the time of the accident, when equal parts of whisky and the common vinegar of the shops, gently heated, were applied with linen cloths, which were kept constantly wetted, without their being removed. Carded cotton was at the same time applied to the breast, the child soon ceased crying, and in less than half an hour fell asleep. At the end of three hours the wet cloths were taken off and the parts examined; the blisters had fallen, and the redness was nearly gone; the cloths were again applied, wetted with the spirits as before, with a less proportion of the vinegar, and continued till next morning; the child passed a good night; the blisters had disappeared; the face had rather a pale bleached appearance, the cloths were allowed to dry, then removed, and a little of the resinous ointment, to be afterwards described, was smeared over the face, and that portion of the neck to which

the cotton was not applied. In three days after, the patient was allowed to have his face wholly uncovered. Slight desquamation took place over some parts of the face, particularly the left cheek, and under the chin. The cotton remained adherent for about twelve days; when removed, the cuticle had separated, leaving the parts underneath sound, but of a reddish colour, and the redness of the face had wholly disappeared. There was no constitutional treatment except a laxative required."

In the next case in which the face was scorched by gun-powder, being swelled, and in parts vesicated, warm vinegar and spirits were applied to one part, and cotton-wool to another. In twenty-four hours the spirituous wash was discontinued and a turpentine ointment applied. The parts thus treated were well in six days, the cotton separated leaving the surface beneath it well in twelve days. The next case will shew the treatment of a burn of more severity.

Case 3. "J. B., a collier. 2d August, 1831.—This morning about three o'clock, while at work in a pit, with his face, neck and arms uncovered, was exposed to an explosion of inflammable gas, and admitted into the infirmary about seven o'clock, a. m. Both arms, hands, and face, with a part of right side are vesicated, and of a dark ashy colour, except where the vesicles are broken, where the skin beneath is of a brownish colour. The neck and ears are also scorched. Is chilly, with some nausea. Bowels costive. Had forty drops of laudanum on admission.

Rx. Sub. mur. hydr. gr. vi.

Opii. gr. i. m. sumat. statim.

Rx. Terebinth. Venetæ, oz. i.

Adep. suill. oz. iii. m. ft.*

Liniment. hoc curent. brachia et manus.

The cotton-wool to be applied to the ears and neck.

* "The above ointment is best mixed by a spatula, upon a marble slab, when it forms a soft liniment, and can

Next day the face and arms were much swollen; tongue dry, with much thirst. Pulse 100. No stool. *Habt. statim bolum commun. et enem. domest. Vesp. repet. mist. diaforet.*

On the fourth day after admission, on changing the dressings, the arms and side were found to be suppurating freely, and less swelled. The bowels had been freely opened. Tongue dry; much thirst; pulse 100; sharp. *To have a solution of salts with senna, and the diaforetic mixture continued.*

9th. Has improved considerably; heat of skin moderate; pulse 100. Expresses some desire for food. Tongue white; thirst continues. Complains of smarting pain from the ointment. *Ointment to be diluted with equal parts of hog's lard. To have flb. of porter daily. Cont. alia.*

10th. Was put upon full diet, and the same treatment continued, under which he began to improve rapidly. The cotton separated from the ears and neck, about the sixteenth day after admission, leaving the parts beneath sound. The fingers were longest in healing, having been most severely scorched. They continued to be dressed with the diluted terebinthine ointment till the 10th September, when he was dismissed cured, the skin everywhere smooth, and without scars."

In the foregoing case it will be observed that the extent to which the tissues were altered and injured by the heat, is not accurately described. This is a fatal omission. We need not detail any other cases. They are mostly specimens of burns of considerable extent, which were treated by terebinthinate applications and proved fatal. In one case, that of a female aged 45, the burn was extensive on the left side of

be applied without removing the dressings, which ought to be changed as seldom as possible. In cases where the disorganization does not go deeper than the cuticle, this ointment requires to be mixed with an equal part of hog's lard, or, if necessary, a little olive oil. Whenever its application begins to give pain, it ought to be diluted."

the chest, and the part was hard and of a dark colour. Under the emetic-cathartic mixture at first, with turpentine dressings, and subsequently tonics and generous living, the slough separated, and the patient was dismissed cured in two months.

Dr. Perry started in the early part of his lecture or paper with condemning exclusive and empirical practice, yet, so far as we see, his own is exclusive, if not empirical. He seems to have one notion—that the parts are debilitated; one creed of treatment—that they ought to be stimulated. Now we do not believe that skin which is merely reddened or vesicated, is to be treated as skin destroyed, and to be thrown off. Is not skin merely vesicated by heat, under nearly the same circumstances as skin vesicated by cantharides? The action is more rapid, but in kind it is similar, in consequences it is analogous. Well, we treat a blistered surface by mild applications, whilst we are directed to treat a burn'd one by stimulants. It may be said that the reasoning is specious, but not borne out by the results of practice. We contend that it is so. We have treated many burns of all kinds and degrees, and we do prefer the sedative treatment for those of the kind we have mentioned. If a patient applies to us with vesication and extensive redness of an extremity, or even of the trunk, *the cutis itself not being killed* partially or totally, we wash the surface with tepid or even cool goulard water, and dress it with lint or linen spread with a mixture of the ointments of zinc and lead, taking care to prick with a needle the larger vesications. Over the whole we lightly apply a roller, and if necessary keep it wet with goulard water. This dressing is to be continued for two or three days, when the redness will usually have disappeared, and the vesicated skin have separated, leaving the exposed cutis either suppurating or cicatrized. If the latter, of course little more need be done; if the former we have recourse to the following means. We wash the exposed surface, which looks somewhat like a strawberry from the prominent red points in the cutis, with a strong solution

of sulphate of zinc, gently dry it, and then dust it freely with the lapis calaminaris or some other absorbent powder, applying over all some ointment spread on linen. Frequently this will effect the cicatrization of an extensive surface, but if portions still appear inclined to suppurate we repeat the application of the powder as often as may be necessary. We can conscientiously assert that plan of treatment, conjoined with the proper use of purgatives, salines, and, when necessary, tonics, is more successful than any other which it has been our lot to witness. There are many particulars of course into which our narrow limits prevent us from entering.

When the cutis is killed we are decided advocates for stimulant applications, and we know of none which are preferable to turpentine. Cotton has lately been cried up; we have seen it tried in some cases, but with no great success, and on the whole we think it not generally applicable. The following opinion of Dr. Perry, emanating from a place where cotton was said to be so successful, deserves consideration.

"In all cases, where no good opportunities exist, of the patient being carefully dressed, and attended to, it is an exceedingly good application, particularly in scalds and superficial burns. Where the burn is so severe, that subsequent ulceration must take place, the application of the cotton wool is sometimes attended with very unpleasant circumstances, particularly in summer; of which the breeding and nestling of maggots in the purulent discharge, and about the body of the patient, producing excessive irritation, is not the least."

In mild cases we imagine that the treatment which we have described will be found more convenient and successful; in severe ones the objections raised by Dr. Perry are of a serious character. On the whole we agree with Dr. Perry in his reprehension of the cold water method of treatment, but we think he has conjured up more local debility than really exists, and attempted to lay his fancied sprite with a stimulating spell,

more potent than is absolutely necessary in all cases. We may return to this subject on another occasion.

XVIII.

A TREATISE ON THE DISEASES OF THE HEART AND GREAT VESSELS, COMPRISING A NEW VIEW OF THE PHYSIOLOGY OF THE HEART'S ACTION, ACCORDING TO WHICH THE PHYSICAL SIGNS ARE EXPLAINED. By J. HOPE, M. D. &c. &c. Octavo. London, 1832.

It is now but a few years since Laennec's discovery was bruited in this country, since the Editor of this Journal had the good fortune to be the first that promulgated in Britain his ideas and experiments. The party that opposed all novelty in all things was powerful then; wisdom was only with their ancestors, and by descent with themselves; what was not known formerly could not be discovered now; the eye and the hand and the nose were to be employed in the diagnosis of disease, but the ear was not: and, in fine, we were to make no improvement, because hitherto little improvement had been made. The party we mention was powerful then, and we will not say that it was descended from that holy band, which had made the starry Galileo too familiar with his woes. This party naturally opposed the stethoscope and the stethoscopists; the first was an "inutile lignum," the last were a credulous crew. And what were their arguments? We will not reiterate them now, we would not, for very charity, call up such frailties from their dread abode. The battle has been fought, and with whom is the victory? Alas! for the children and advocates of things that were, the inutile lignum has grown into a noble tree, and its branches have spread and its twigs have shot into the recesses of their own high places. The no-stethoscope cry is heard no longer; those who raised it are ashamed of it, those who listened to it laugh at it. Men of sense and of can-

dour have examined for themselves, they have tested the merits and defects of auscultation where they should be tested, in the hospital or sick-chamber, not in the *persiflage* of conversation, or the formal disputes of a debating society. Of those who have resorted to the enquiry with this spirit and in this manner, very few have condemned auscultation as a system of fallacy or delusion, though some have found their patience inadequate to carry them through the investigation. The opponents are silenced, the advocates consider it necessary to exert themselves no longer, and those who see with the eyes of 1831, that is to say, whose minds are not cast in the mould of some centuries ago, may perceive the more aspiring, intelligent, and active of the rising generation of professional men, engaged in the study of auscultation, as a component part of their medical education. There is nothing surprising in this to him who has studied, even in a careless mood, the history of his species. We cling in age to the tales of our childhood, to the knowledge obtained by the vigour of our manhood, and time which lays the sophist and the sage in the dust, consecrates too often both their folly and their wisdom.

It is not necessary now to preface an article on auscultation, by proving that such a study is not absolute nonsense. It has been decided by the voice of the profession, that it must in future make a part of a scientific physician's and surgeon's education. But this science, or department of science, is not perfect, (we should wonder if it was so,) and the labours of those who pursue the investigation must be directed to the confirmation of some points, the correction and the elucidation of others.

We hail the appearance of the work, the title of which we have placed at the head of this article with a high degree of satisfaction. It is not the hasty speculation of a day, got up to meet a passing ferment, engendered in imperfection to be entombed in oblivion. We have reason to know that Dr. Hope has devoted some time and attention to the study of the subject on which he writes, and although we have no doubt that he

is better read than to be unacquainted with what others have thought and said, yet we feel equally confident that his work is not a mere compilation, a dictionary of quotations, octavo-rigged, a privateer fitted out by merchants of the Row, sailing under false colours to capture the weak and inadvertent. Before this review is completed we shall enable our readers to determine whether our good opinion is unfounded.

The article on cholera in this number of our Journal has curtailed our space. We shall therefore be unable to give a complete account of the work of Dr. Hope at the present moment, in fact, we shall merely be enabled to commence an analytical review, which will probably be completed in our next.

The introduction to the volume, occupying thirty pages, is deserving of attentive perusal, as it points out the scope and aim of the author, and marks in a satisfactory manner the deficiencies and defects of the recognized theories and opinions on the affections of the heart. Dr. Hope properly argues, that dangerous and intractable as these diseases unquestionably are, they may yet be reasonably expected to be rendered less so, when careful clinical observation of the general and physical symbols of its condition presented by the heart, shall enable the physician to detect the earlier variations from natural structure, the less prominent alterations of natural function.

"Many think that the expectation of effecting an improvement in the diseases of the heart chimerical: and they think so because, not being accustomed to recognise the diseases in question before they have attained an advanced stage, they are pre-occupied with the old and popular idea of their incurability. To such it might, perhaps, be a sufficiently philosophical answer to reply, that an improved knowledge of the nature and causes of a disease, must alone necessarily lead to an improvement in the treatment; and that the therapeutic weapons are dangerous when wielded in the dark. But here we may go much farther: we may say that, by the improved means of diagnosis, the maladies under consideration may be

recognised, not only in their advanced, but in their incipient stages, and even when so slight as to constitute little more than a tendency. We may say on the grounds of incontestable experience, that, in their early stages, they are, in a large proportion of instances, susceptible of a perfect cure; and that, when not, they may, in general, be so far counteracted as not materially, and sometimes not at all, to curtail the existence of the patient. We may accordingly predict, that the term 'disease of the heart,' which at present sounds like a death-knell when whispered by the physician, will hereafter become by familiarity not more alarming than the term *asthma*, under which it is frequently disguised."

Such are the *direct* practical improvements to be expected from a better knowledge of the diseases of the heart. But there are others of equal magnitude.

"It has been stated by M. Richerand, repeated by Bertin, and echoed by all who are conversant with this class of maladies, that 'hypertrophic enlargement of the heart is more closely allied to apoplexy and palsy than the apoplectic constitution itself.'*

Should the hypertrophy be recognised, its effects on the brain may be counteracted by judicious treatment: should it be overlooked, the patient, with a view to reducing his *apoplectic fulness of habit*, is ordered smart exercise, which by increasing the action of the heart, already too powerful, causes a preternatural determination of blood to the brain and induces the apoplectic or paralytic seizure. According to evidence hereafter to be adduced, the majority of those who are cut off prematurely in the apparent enjoyment of good health, sink under the circumstances described.

Again, there are few more common

* " This constitution consists, according to the proper idea, in a broad, robust frame, full habit, and florid complexion. It is in general attended with an unusual size and thickness of the heart."

and certain exciting causes of palpitation and difficulty of breathing in disease of the heart, than derangement of the stomach. What happens to the patient in this case ? Tracing the attack, in perhaps every instance, to dyspeptic fit, he naturally concludes that the latter is the cause : that it is 'all indigestion.' 'Good air and plenty of exercise' are the remedies recommended : the result is an apoplectic seizure. The circumstance that before the introduction of the new mode of exploring diseases of the heart, they could rarely be detected in their early stages, contributed to the error in question. For, as patients frequently recover from the early stages, the recovery was regarded by those who assumed this class of diseases to be incurable, as a proof that the affection was merely dyspeptic. Hence dyspepsia acquired the reputation of producing certain symptoms, particularly in the head, which are in reality foreign to it, being exclusively the results of a co-existent disease of the heart.

There prevails another error, the converse of the above—that of mistaking the nervous or really dyspeptic palpitation, for disease of the heart. The frequency of cases of this kind, especially amongst men of studious habits, (and more particularly, I have noticed, among those of my own profession,) is truly surprising ; and, as it has always been considered difficult, and by many impossible, to distinguish the two affections, the alarm created is sometimes distressing. Having thought this subject of so much importance as to demand a separate article, I shall here only say, that so far as my own experience enables me to judge, the distinction may be made with ease and certainty.

An immense proportion of asthmas—and of the most dangerous and distressing cases, result from disease of the heart : the same may be said of dropsies, especially those that are universal. If the cause is overlooked, the asthmatic is harassed with a farrago of inappropriate and unavailing, not to say pernicious remedies ; and the hydroptic is treated with dangerous ac-

vity ; or for imaginary affections of the liver, the lungs, or the kidneys. On the other hand, if the cause be detected in the incipient stage, by precautionary measures, both the one effect and the other may in general be prevented.

In acute rheumatism, there is no more common and formidable source of danger than inflammation of the heart and its investing membranes. Should it be overlooked when existing in a severe form, (and even then it is one of the most obscure and insidious of maladies,) the patient almost invariably dies from the immediate effects of the attack, or becomes a short lived martyr to an incurable organic disease of the heart.

There is scarcely a disease of the heart, accompanied with obstruction of the circulation for any considerable period, which is not productive of enlargement of the liver, and, sooner or later, of its ordinary consequence, abdominal dropsy. Yet there are few common facts in medical science less generally known than this intimate connexion between the heart and the liver. The dropsy is ascribed to the latter ; the treatment extends not beyond this organ ; the unknown cause continues to reproduce its effect, and the patient, if he obtain relief at all, only obtains it to undergo a speedy relapse.

Individuals affected with disease of the heart are peculiarly liable to inflammation of the lungs ; and such inflammation, as I have endeavoured strongly to inculcate throughout this volume, is singularly rapid and destructive. Yet if, from ignorance of the state of the heart, free depletion be practised on the ordinary principles, the patient may sink suddenly after the first or second abstraction of blood. I have more than once witnessed this catastrophe, and few practitioners of experience have not seen the same.

In fever and inflammation in general, disease of the heart may impart to the pulse dangerously deceptive characters of hardness, fulness, weakness, or irregularity, and the patient may be bled too much from the prevalence of the former characters, or too little from the presence of the latter.

Thus it is seen that the practical improvements to be derived from a better knowledge of the diseases of the heart, extend, not to the diseases of this organ alone, but to a multitude of the most formidable maladies incident to the human frame. There is, in short, scarcely an affection with which disease of the heart may not be more or less interwoven; and, 'if,' to use the language of Senac, 'we would not pronounce rashly on an infinity of cases; if we would not harass our patients by noxious and unavailing remedies; if we would not accelerate death by treating certain diseases like others which are entirely different; nor be exposed to the disgrace of seeing our diagnosis falsified by the results of dissection; finally, if we would not have danger to be imminent, whilst we are under the blind impression that it is remote, we must study the diseases of the heart.'

In the first chapter Dr. Hope very properly considers the relative anatomy, or the anatomy of situation, of the heart, and the application of percussion to the diagnosis of its conditions. The following important passages cannot be materially condensed, and should not be omitted.

"As the apex and body of the heart are free, while the base, secured by the great vessels, is comparatively, though not absolutely fixed, the organ turns in a slight degree upon its base with each alternate movement of the diaphragm, the descent of the muscle causing its longitudinal axis to assume a more vertical position, and the ascent throwing it transversely to the left. It is necessary, therefore, that the auscultator fix upon some given point at the base, which may serve as a mark and guide for his exploration of the situation of the organ. The point which to myself has appeared the most certain, is, the pulmonary artery. This vessel, midway between its origin and the place where it divaricates into the two trunks distributed to the lungs, bulges at the interspace between the second and third left ribs close to the sternum, a circumstance which, as well as the situation of the other parts of the heart, I have carefully ascertained by forcing needles

through the thoracic walls, at given points, into the viscera beneath. The situation of the pulmonary artery was, also, well displayed by the dilatation of that vessel described in case xx. (Weatherly.) A line drawn from the inferior margins of the third ribs across the sternum, passes over the pulmonic valves a little to the left of the mesial line, and those of the aorta are almost directly behind them. From this point the aorta and pulmonary artery ascend; the former inclining slightly to the right, coming in contact with the sternum when it emerges from beneath the pulmonary artery, and following, or perhaps rather exceeding, the mesial line, till it forms its arch; the latter, which is, from the first, in contact with the sternum, inclining more considerably to the left, until it arrives at the interspace between the second and third ribs above described. A vertical line coinciding with the left margin of the sternum, has about one third of the heart, consisting of the upper portion of the right ventricle, on its right; and two thirds, composed of the lower portion of the right ventricle and the whole of the left, on its left. The apex beats between the cartilages of the fifth and sixth left ribs, at a point about two inches below the nipple and one inch on its sternal side.

The lungs descend along the margins of the sternum about two inches apart, and overlap the base of the heart, slightly on the right side, and more extensively on the left: then, receding from each other, they leave a considerable portion of the right ventricle, and a less extent of the lower part of the left, in immediate contact with the sternum.

The right auricle is in front of the heart, at its right side and upper part. One portion of it is overlapped by the right lung, and another, principally the appendix, is in contact with the sternum. The left auricle is situated deep behind and to the left of the heart at its upper part, opposite to the interval between the cartilages of the third and fourth ribs. The extremity of the appendix is visible in front, but, when the volume of the heart is natural, it is not in contact with the sternum, being con-

siderably overlapped by the left lung. The pericardium ascends on the great vessels as high as the commencement of the arch of the aorta, and opposite to the second ribs.

When the heart is enlarged, its longitudinal axis becomes placed more transversely, and its lateral diameter is increased. Hence, the right ventricle projects more considerably to the right, sometimes under the whole breadth of the sternum; and the left extends far beyond its usual limits to the left, sometimes elevating by compression that portion of the lung which overlaps it, so as to bring nearly its whole surface, and the tip of the auricular appendix, in contact with the sternum. In addition to being broader and placed more transversely, the organ descends lower than natural—its apex sometimes beating between the sixth and seventh ribs, and its pulsation extending to the epigastrium.

When the right auricle is dilated or gorged, it extends upwards and to the right, and comes more extensively in contact with the sternum.

When the pericardium is distended to the utmost with fluid, it forms a pear-shaped bag, the top or narrow extremity of which sometimes mounts even above the second rib: its sides are nearly in contact with the sides of the heart, while its front is separated from the anterior surface of the heart, in the dead subject, by two or three inches of interposed fluid.

From the above description the auscultator will understand in what situations to explore the lesions of the various parts of the heart."

Dr. Hope mentions a few particulars on the mode of employing percussion, to which we may allude. When great delicacy is required, percussion on the *plessimeter*, lined with wash leather, is preferable to that on the back of the fingers. Of course, percussion on a solid body emits a dull sound, but on a body containing air, elicits a hollow one. M. Piorry has also discovered that if a solid body be placed beneath a sonorous one, the sound is modified in consequence, and is intermediate between hollow and dead. This ensues from the

vibrations of the air in the sonorous body, being checked by impinging on the more solid substance.

We regret that we must defer until our next number the continuation and conclusion of our account of the present work. The lateness of its publication, and the all-engrossing malady which now occupies men's minds, and threatens to occupy their bodies, must plead our excuse with the talented and indefatigable author, as well as with the public.

XIX.

[Appendix to Article on Cholera.]

CHOLERA IN ENGLAND.

WHEN this mysterious epidemic was advancing westward from Moscow and St. Petersburg towards the shores of the Baltic and North-Sea, the panic in this country was great—when it reached Hamburgh, it was still greater—but when it burst on our shores, and was announced to be an *imported* disease, the consternation was at its height. So long ago as last June, the Editor of this Journal hazarded a prophecy (a hazard which he was a fool to run) that, should the epidemic cholera invade Great Britain, it would be greatly modified in its character, and much abated (comparatively speaking) in its fatality and rapid dissemination, by the nature of our climate and the manners and habits of our population. This prophecy was immediately met by other prophecies, promulgated through the same channels, intimating that, from the facilities of our communications, and various other circumstances, the cholera, when once *introduced* on British soil, would spread like wild-fire, and produce havoc the most prodigious. The final fulfilment of these prophecies is yet in the womb of time; but as far as the events have yet gone (10th of December) the Editor has but little cause to repent of his prognostications. Without going, at present, into the question of the exact period at which the epidemic made its first appearance,

in this country, we shall take for granted, the dicta of the Board of Health, which dates the first death on the 26th of October last. On the 10th of December, or nearly seven weeks after its outbreak, what was the extent of its *travels*—for this is the fashionable term for its propagation? We are rather at a loss for a simile or example to illustrate the journeys of this scourge, which was to go much faster than a steam-carriage. It crept, like a skulking hyena, from one dirty lane to another, seizing chiefly on those who were half in the grave already, or who, from terror, were flying before the enemy. It rarely or never attacked those who boldly faced the foe.

During the above period, the disease confined itself to Sunderland—and to the very worst parts of Sunderland—localities which might well compete, in filth, poverty, and wretchedness, with the back lanes of Fondi and Itri—that sink of squalid sordidness, the Jews' quarter on the banks of the Tiber—or the dunghill dens of the Cretins in Sion or Martigny! The scourge, that was to spread like wildfire, or dart with the rapidity of lightning from city to city, and from town to town in Great Britain, wasted nearly seven weeks, in carrying off about 120 of the most decrepid, drunken, famished, filthy, and aged inhabitants of a sea-port town! We need not, of course, conclude that Newcastle or any other great town can finally escape an epidemic, whose mysterious cause has pervaded a great part of the Old World, and will probably reach the New.*

But it is very curious to observe the change of tone in exclusive contagion-

* Since writing the above, indeed, the disease has commenced, or rather *re-commenced* in Newcastle—and the wonder is that it did not spread thither and to many other places long before. The report from Sunderland this day, 12th December, is 17 new cases, 4 deaths, and 23 recoveries. If the epidemic assume no more formidable character than this, England need not despair!

ists, even in the course of a few months. An ingenious friend of ours has constructed an instrument for measuring the temperature of the contagionists. He calls it a LOIMOMETER, or pest-gage, the highest degree of which is marked ULTRA-CONTAGION—the middle is CONTINGENT CONTAGION—and the lowest is NON-CONTAGION. It is very evident, from the following official records, that the ultra-contagion temperature has fallen surprisingly in less than a single month.

State of the LOIMOMETER at the Board of Health, 20th October, 1831.

[120° OR PLAGUE TEMPERATURE OF EGYPT.]

" Immediate separation of the sick from the healthy"—"conspicuous marks on infected houses"—"rags, papers, old clothes, and hangings to be burnt"—"dead to be buried in the vicinity of the house selected for cholera patients"—"all persons employed about the sick (including the doctors, of course) to live apart from the rest of the community"—"all articles of food to be placed in the front of infected houses, and received by one of the family, *after the person delivering them shall have retired*"—"convalescents and all those who have had communication with them, to be kept under observation for a period of not less than 20 days"—"all intercourse with an infected town and the neighbouring country to be prevented"—"troops, or a strong body of police to be drawn around infected places, so as utterly to exclude the inhabitants from all intercourse with the country, if so fatal a disease should ever shew itself in this country," &c. &c.

State of the LOIMOMETER at the Board of Health, 14th November, 1831.

[92° or low fever heat in England.]

" Cholera is not more infectious than fever"—"all measures of coercion for the prevention of intercourse with infected persons or places to be deprecated; when tried on the Continent they have invariably been productive of evil"—"this disease *seldom* spreads in families, and *rarely* passes to those about the sick, under proper observances of

cleanliness and ventilation." "It will not, therefore, be necessary, when there is space, and where due attention is paid to cleanliness and purity of air, to separate members of families actually affected by the disease—nor to insulate individual houses, unless in cases of crowded, filthy, badly-ventilated habitations, and other contingencies, which involve the health of all."

We entreat the attention of our brethren to these two sanitary documents, issued within twenty-one days of each other, from the highest authorities in the land, and say whether the Loimometer of the high-contagion party did not fall, in that short space of time, from plague-heat to that of "CONTINGENT CONTAGION." The Central Board tells us, in fact, that, to take away filth and foul air, is to take away the power of cholera to propagate itself by contagion. Is not this the very doctrine which the Editor of this Journal maintained throughout the whole period of the panic? In the TIMES JOURNAL, of June the 27th, he maintained this doctrine—in the same journal of October the 29th, before the Central Board was established, he thus expressed himself,—"That a focus of infection may be generated occasionally, in deep cellars and the crowded hovels of poverty, I do not doubt. The same thing takes place every year, in fevers and other diseases." Now we ask the profession—we ask the ultra-contagionists themselves, what more is contained in the Curriculum of the Central Board, than is contained in the foregoing short passage?—Yet the Editor is taunted with having "changed his opinions"—with having advanced on the Loimometer from non-contagion to "contingent contagion"—when the foregoing facts prove, beyond the possibility of denial, that the ultra-contagionists have dropped, in twenty-one days, from the plague-temperature, down to the very point which the Editor fixed on as his creed, when the ultra-contagionists were in the plenitude of their power—though, as it soon after appeared, on the brink of their fall!

The Contingent Board (by which we mean the Central Board) tells us that

the epidemic cholera is not more infectious than the ordinary typhous fevers of this country. However we may respect, individually, the members of this, or of any other Board of Health, we have lived long enough in the world to know that a BOARD OF HEALTH is not infallible in its doctrines or conclusions. Were they infallible, we should not have to record upon our pages, the most extraordinary change of doctrine, in three short weeks, that ever was recorded in the annals of medicine! But we will assume that the dicta of the Central Board are the dicta of Omnipotence—that no possible error can creep into their conclusions—and that their fiat is fate itself. The infection of cholera is not more powerful than that of the typhus of our own country. Well. Derobe a typhous patient of *filth and foul air*, the contingencies to which we have alluded, and you take from the fever the power of propagation. You may then feel his pulse, examine his tongue, analyse his evacuations, press his abdomen—and, when he dies, dissect his body, with about as much chance of catching the fever, as of learning from him the secret of alchemy. The infection, then, is a contingency. Take away that contingency and you destroy the infection. By what species of logic are we to maintain that this *contingent infection*, the creature of circumstances, is an essential and inseparable character of the disease—seeing that we can produce it by crowding and filth, and annihilate it by ventilation and cleanliness? Let us compare typhus or cholera with a really and an essentially contagious disease—namely, small-pox. Place a patient with small-pox in a ward of 500 feet in length, by 50 in breadth. Let every possible ventilation and cleanliness be enforced—and then bring an uninoculated or unvaccinated child into contact with the variolous subject. Would the contagionist do this with his unprotected child? Not he! But he might bring his child into contact with a typhus patient circumstanced as above, with the most perfect security. Yet this typhus is the standard or measure, which Drs. Russell and Bar-

ry have given us, whereby we are to estimate the infectious power of cholera.

We are told, by men who have never seen the epidemic cholera in this or in any other country, that the disease may be discriminated, even by a child, from any grade of sporadic cholera—even by the smell. Yet in the case of Jordan, who died in Newcastle, towards the end of November, Dr. Daun could not say whether it was the Asiatic or the indigenous cholera of this country! The details of the case were submitted to the Central Board of Health in London—and they could not decide! They could only say, in imitation of the Delphic Oracle of Apollo, that it was—"suspicious"!! This man, Jordan, died in the same locality where a man of the name of Reay died two or three months previously, with the same symptoms—namely, in the dirtiest part of Newcastle. The authorities on the spot disclaim all idea of communication between Jordan and any person in Sunderland. But it comes out that this man was very dirty in his habits—in his vocations—and that, in addition to all this, he kept a PIGGERY, in which he spent a great part of his time! According to the testimony of his wife, he was subject to what Sydenham calls "gripping of the guts"—but having died one day, the Mayor of Newcastle shewed his zeal, by reporting his death to the Government of Great Britain! The coals of Newcastle, as a matter of course, were subjected to 10 days quarantine in Sandgate Creek, while free communication was allowed between the house and inmates of the deceased, with all England! So much for the consistency of the contagionists!

In respect to the *introduction* of cholera into Sunderland, the contagionists of our medical societies, and of our anonymous writers in the periodical press, consider it as a matter demonstrated, that some healthy sailors brought it from Hamburg, in a return collier. The King, however, who is no bad authority upon this occasion, tells us, in his speech from the throne, on the 6th of December, that, "whether it (the cholera of Sunderland) is indigenous,

or has been imported from abroad, is a question involved in much uncertainty." This is not kind in his Majesty, to throw the shadow of a doubt upon a question which had been settled by a few of his liege subjects in various parts of the kingdom (always excepting Sunderland, where of course, they could know nothing about the matter) long before the speech issued from the throne! If then Jordan's case was one of *sporadic cholera*, it shows the difficulty, if not impossibility, of discriminating it from one of the epidemic, or as it is now called, the Asiatic disease. If it was the real Continental cholera, how is it that it did not immediately spread in the same neighbourhood? This, at least is a consolatory reflection.

In this place we cannot refrain from noticing an important discovery, or rather the confirmation of a discovery, made at Sunderland, and promulgated widely. We have all heard much about cholera travelling from one country to another; but it was reserved for the writer at Sunderland to give us a well-marked case of "*A TRAVELLING CHOLERA.*" A woman travelled from Sunderland to Houghton, a distance of six or seven miles. She was seized with cholera the same day, and died at Houghton. This is a case of *TRAVELLING CHOLERA!* The sagacious observer designates it as though he suspected no particular relationship between the woman and the cholera. No. It was by mere accident that they travelled on the same road—by mere accident that they travelled on the same day—by mere accident that this disembodied evil spirit took possession of his fellow-traveller at Houghton, and put a period to her existence. If this be the way in which cholera *travels*, why then ague travels thus every year, from the fens of Lincolnshire to the green hills of Erin. And verily we suspect that the reporter has produced a very awkward illustration of the mode in which cholera *travels* from place to place. We believe that many a person has carried the disease itself, in a state of incubation, from one point to another, when it was supposed that the *contagion* was wafted by the air or by fomites from

place to place. Considering the emigration that must have taken place from Sunderland to the neighbouring towns, it is astonishing that great numbers should not have travelled with the seeds of the disease in them, and exhibited it far beyond the confines of Sunderland! And here we cannot help taking notice of a watch-word by the ultra-contagionists—namely, the necessity for PRECAUTION. They thereby insinuate, we should suppose, that the opposite party, according to their tenets, inculcate *no precaution*. But let us ask what they mean by PRECAUTION? Do they mean the revival of the pest-laws, as recommended by the Board of Health in October last, and in the Quarterly Review? or do they mean ventilation and cleanliness? If the latter be their meaning, the anti-contagionists and the contingent contagionists enforce, as the very foundation of their doctrine, the removal of filth and foul air. What, then, we again ask, is there in the “*precautions*” of the contagionists, which is not contained in those of the anti-contagionists—except the pest-regulations, which even the contagionists themselves have renounced? If, then, the sanitary precautions be precisely the same, whether prescribed by one sect or the other, let us hear no more of those accusations thrown out upon each other, respecting the sins of omission or commission, on the subject of hygiene.

If we prognosticated, many months ago, that cholera, if it came to this country, would come in a mitigated form, we have the assertion of the King—*Regem quis audeat dicere falsum*—that our prognostication has not been entirely without some foundation in truth. “Its progress (says His Majesty) has neither been so extensive nor so fatal as on the Continent.” When we consider the *weak point* which has been first invaded by the enemy—when we consider that the invasion took place, at the very latest, in the month of October—when we find that cholera spent seven weeks in what may be called the suburbs of Sunderland, carrying off debilitated, aged, and diseased victims, scarcely sailing a single individual in the better

classes of society—when we reflect that free intercourse enabled it not, in that time, to get beyond the first spot which it fixed on—have we not some reason to hope and to expect, that the ravages of the disease will not be greater or more rapid when it invades other towns and places of England? Is it not prudent to indulge this hope and this expectation, even if our anticipations should turn out to be unfounded? Terror predisposes the timid more to the assaults of this epidemic than all the gin and porter which they drink—the panic of Sunderland has deprived our poor of coals—has put our ships in quarantine, in every port from the North to the South Pole—will cost our merchants some millions of money—will cripple our commerce for years—and by the distress and poverty thus induced, will destroy more, perhaps, by want and chagrin, than the disease itself would by its actual presence! Such are the fruits of unnecessary, unmanly alarm. Unnecessary alarm, because cholera is acknowledged by the highest authority, to be not more infectious than fever—unmanly alarm, because it is contrary to all precepts, ancient and modern.

Rebus angustis animosus atque
Fortis appare.

Here we would beg to draw the attention of our brethren to a very important subject—the medical constitution of the year 1831 in this country. We believe it is a fact established beyond all doubt, that, ever since the month of May last, a disposition to gastric irritation and bowel-complaints has obtained, in a degree infinitely exceeding that of any former year for a considerable period. This gastro-intestinal irritability has not been confined to the lower classes of society, but has prevailed among all classes. For our own parts, we can safely aver that we have seen more cases, even in the better ranks of society, of diarrhoea, dysentery, and cholera, during the last six months, than during the preceding twelve years. Numerous instances have come under our observation, where people could previously indulge, with impunity, in irregular habits of the table; but who now paid dearly for any such latitude in

food, especially in fruits and other kinds of vegetables. The public journals and the experience of our contemporary brethren, as well as our own, have furnished numerous examples of severe and even of fatal cholera. Dr. Marshall, Dr. Brown, Dr. Fergusson, Dr. Burne, and many others, have given their testimony to this effect. We refer, in particular, to the excellent letter of Dr. Brown, of Sunderland, published in our *EXTRA-LIMITES*, for proof that cholera prevailed in Sunderland, and in all the neighbouring districts, to a very great degree, and often fatal in its terminations, ever since July last. It has been the custom to draw vivid pictures of extreme cases, and hold them up to public view as specimens of the Asiatic cholera in this country, while the various minor grades and forms of the disease were slurred over. The "malignant cholera" was held forth as THE cholera, while diarrhoea and common cholera, far more numerous and far less fatal, were, for a time at least, kept under distinct heads. Let us compare this procedure with epidemics of other diseases. Suppose we were to employ the force of our pens and our imaginations in portraying extreme cases of variola, delineating, and correctly too, the whole body of a fine boy or girl as one mass of black, mattery, ichorous, and mal-odorous scabs and incrustations, neither eyes nor any other features to be distinguished, and, in fact, the entire individual, reduced to the state of a putrid carcase, before the lenient hand of death put an end to such indescribable loathsomeness. This might compete with the pictures of blue cholera presented to the public every day, while all the minor grades of variola, with all the diarrhoeas and other modifications of cholera were purposely kept in the back ground. Would this be fair? Certainly not. Numerous examples might be collected from the experience of this year, where fatal cases of cholera occurred in various parts of England, scarcely, if at all, to be distinguished from the Asiatic cholera. We shall quote one or two. A journeyman tailor was walking along Hanover Street in November last, and was taken so ill as to

be carried to St. James's Workhouse, in Poland Street, with cholera. The surgeon, Mr. Braine, was so struck with the symptoms presented by this man that he ran for the Editor of this Journal, after he and Mr. Hillman had taken the proper steps of treatment. The man's face was pale and blue—his features shrunk—a dark circle round the eyes—skin cold—pulse imperceptible—stomach and bowels ejecting watery fluids—cramps so painful as to cause him to roar out—tongue and breath cold. Such was the condition of this man when received into the Workhouse; and though he had been in the warm-bath, and had brandy and laudanum exhibited before Dr. Johnson arrived, his state was little altered, except that the pulse had become perceptible, and the skin was warmed by the bath. The magistrates of Marlborough Street were eager to have a decided opinion on this case; but neither Dr. Johnson nor the other medical attendants could say that it was not one of the true Asiatic cholera. In fact, it presented every feature of the disease as it now prevails in Sunderland. In two hours the medical attendants had another consultation, and now things wore a more favourable aspect. The pulse was more developed, the skin warmer, as well as the breath—he had only been three times sick and purged in the two hours—the spasms were mitigated—the man was recovering. The patient's wife, meantime, had arrived, and informed us that her husband had eaten a quantity of pickled pork and hard cheese for supper the preceding night—and, moreover, that he had had a similar attack, though much slighter in degree, ten days previously. We were now in a condition to certify, for the information of the Secretary of State, that Hollis the tailor laboured under cholera certainly, but not Asiatic or imported cholera. Next day the tailor was able to cut out a waistcoat for his wife to sew up. Now this man, in all human probability, would have died, had not the most prompt means of relief been obtained—and in that case, who could have distinguished the disease from Indian cholera? Who,

we ask, could have discriminated the case when the man was brought to the Workhouse? We, who have seen the Indian cholera, could not.

We will state another case still more remarkable. A medical practitioner residing in Piccadilly, or at least in partnership with a surgeon there, went, in August last, to hear Paganini at the Opera-house. He afterwards went to bed in his usual health. Next morning, when his wife awoke, she was petrified on looking at her husband, who appeared more like a corpse than a living being! He was sleeping calmly, though so shrunk and altered (he was a young man) that she scarcely knew his features. She sat by him for nearly an hour, not daring to wake him. The instant he awoke, he cried out for the wash-hand basin. Vomiting and purging commenced—all the phenomena of Indian cholera presented themselves (so at least we are informed by his partner) and he died that night.

Mr. Pretty, of Mabledon-place, related in the Westminster Med: Society a fatal case of cholera which occurred in his practice in the present Autumn, exhibiting all the symptoms of the Indian cholera. The patient survived the blue or cold stage, but died in the next or stage of re-action. We, ourselves, witnessed a case, so far back as July last, in a lady, who presented the features of the Indian cholera so exactly, that we put it down as one that would be almost certainly fatal. She recovered after being apparently in the jaws of death. From communications which we have received from various practitioners in town and country, we could multiply these examples to a very great amount; but the above authentic instances, coupled with the general disposition to similar complaints, which has prevailed for several months, will be sufficient to prove that the medical constitution of the present year has been eminently choleric, gastric, or intestinal, whichever term we may adopt. The case which we quoted at page 131 of this number, from Dr. Marshall, was acknowledged to be one of English cholera; but let the reader carefully re-peruse the symptoms, and he will find

every one there that appertains to the Indian cholera—*even the total suppression of urine for three whole days before death!* Dr. Dunn saw this case, and decided that it was *not* Indian cholera. Would he do so now? We ask Dr. Dunn what symptom of the Asiatic cholera was wanting in Dr. Marshall's case?

But to return. Our readers will perceive by reference to the article on cholera, that, in Orenburg, Moscow, Warsaw, and other places, there was a prevailing disposition to stomach and bowel-complaints, previously to, and contemporaneously with the epidemic. The same disposition now unquestionably obtains in this country. Can this be accounted for on the supposition of a contagious principle communicated from individual to individual, and consequently beginning in one fixed point, and thence radiating, by means of men or goods, to all other points? We think this is a very narrow or confined view of the subject. Is it not more rational and accordant with experience, to attribute this as well as the other epidemics to some general cause, of which we are ignorant, while the emanations of the sick, in crowded, filthy, and unventilated apartments, endow the epidemic with a malignity and even an infectious character, not attendant on its origin, or essential to its nature? If it arose in Jessore, from causes beyond our ken, might it not, or rather did it not, arise from similar causes, in Calcutta, and hundreds of other places? We have the authority of Dr. Brown and others, that cholera prevailed in Sunderland and other places in the vicinity, to a very unusual extent, during the late Summer and Autumn. Can we much wonder that, in such places as Dr. Barry and others have described, where whole families were huddled together in one room, with little food and less cloathing, a malignancy and infection were superadded to the original epidemic? The same takes place in fever, in dysentery, in erysipelas, in scarlatina, and in many other diseases. Did not Dr. Barry declare, in the Westminster Medical Society, on the 10th of December, that the cholera of Sunder-

land resembled much more a malignant fever than the common cholera, as described by ancient and modern authors?

There can be little doubt, indeed, that in the crowded, populous, and wretched habitations of man, both in Asia and Europe, cholera, as well as all other diseases, under an epidemic influence, must and will assume new and additionally fatal symptoms; so much so, indeed, that we do not wonder at medical men declaring their belief that the cholera, for example, is a new disease, *sui generis*, never before witnessed on this earth. There is nothing *new* in this creed. Chisholm christened a fever on the coast of Africa by a new name (Bulam) and maintained that it was *sui generis*. He maintained that it traversed the Atlantic, and spread in our West Indian Islands, as well as along the shores of North America. This doctrine was maintained by hundreds of proselytes at that time; but is now laid in the tomb of the Capulets!

It has been argued in our medical societies, and particularly by Dr. Copland, that the cholera morbus of 1817, was never before witnessed in India. Yet all the essential features of the disease are described by Paisley, Curtis, and others—while we have the authority of Sonnerat that, in one epidemic visitation of cholera *sixty thousand* men died of it on the Coromandel coast in one year! Curtis, Paisley, and Johnson have described the “coldness of the skin”—“the shrinking of the features”—“the watery purgings”—“the cessation of the pulse”—“the sinking of the eyes”—“the cold and shrivelled fingers and toes”—“the laborious breathing”—“the *livor of the countenance and extremities*”—“the spasms”—and the fatal termination of the disease in “four or six hours.” What more would Dr. Copland wish?

It is said by some writers that a peculiar smell issues from the bodies of choleric patients, and which proves it to be a disease *sui generis*. Let us hear what Mr. Annesley says on this point—an authority which Dr. Copland will be the last to question.

“Upon opening the abdomen, a peculiar offensive odour was sometimes ob-

served, particularly in those who died suddenly.”

Now who has not observed a peculiar offensive odour on opening the abdomen of people in this country who have died of other diseases than cholera? We have the authority of Dr. Hamett, who witnessed the disease on a large scale at Dantzic and other places recently, that this peculiar odour is rarely perceptible.

It has been argued also that the secretion of bile distinguishes the Asiatic from the cholera of this country. In the Asiatic disease, say they, no bile is secreted, or at least appears in the vomitings and purgings; while, in the cholera of this country, deluges of bile come forth. Nothing can be less correct than the latter assertion. Those who make it, have not observed accurately the train of phenomena, *from the beginning*, in severe—indeed, we might say, in the *common cholera* of this country. The advocates of this doctrine laud Sydenham as a careful observer of Nature—but they are forced to acknowledge that he never even mentions *bile* as an ingredient in the ejected matters from the stomach or bowels in cholera. The real state of the case is this. When a man is seized with cholera sporadica in England, the contents of the stomach and bowels are first ejected—then watery fluids, or whatever he has taken in—and *after some hours of straining*, bile occasionally or frequently appears in the discharges upwards and downwards. What is there here more than we see in a healthy person who has taken an emetic? We long ago shewed that bile was not the *cause* of cholera in this country (though generally considered so)—that it was usually absent in the cholera of India—and that, though a secondary or ternary link in the chain of phenomena, it was a favourable symptom in all countries and cases. If we look to one of the oldest and also to one of the latest writers on cholera—Aretæus and Bateman, we shall find the above statement confirmed. “*In primis* (says Aretæus) *quæ evomuntur, aquæ similia sunt; quæ anus effundit, stercorea, liquida, tetri odoris sentiuntur. Siquidem longa cruditas et malum*

excitavit, quo si per clysterem eluantur, primo pituitosa, mox biliosa feruntur.” De Cholera.

Dr. Bateman, in Rees' Cyclopædia, remarks :—“ The bowels are seized with griping pains, and the stools, which are at first *thin and watery*, as in common diarrhoea, are passed frequently. The stomach is seized with sickness, discharges its contents, and rejects what is swallowed. *In the course of a few hours*, the matter vomited, as well as that which is discharged by stool, appears to be pure bile.”

But why need we consult authors when Nature is before us. Let any one who reads these lines accurately observe a case of cholera, *from the very beginning*, and he will find Dr. Bateman's description correct. But medical men seldom see a case till after several links of the chain are broken, and hence they have too often described from the middle of the case, instead of from the beginning. Dr. Barry very properly stated in the Westminster Society, that the absence or presence of bile was not essential in the blue cholera. He often saw healthy bile passed—and the gall-bladder was generally turgid with bile; but the gall-ducts were almost always impervious. Our readers will see how exactly this tallies with the TRINIDAD FEVER, as described by Dr. Hacket, in our EXTRA-LIMITES.

The relative mortality of this disease in India, on the Continent, and in England, deserves a remark. In India the average was 1 in 8. In St. Petersburg, Warsaw, and Hamburg, it was more than one in two—while in England, up to the 14th December, it was scarcely 1 in 3. How are we to account for this? In India, we may be sure that the ratio of mortality was chiefly drawn from our military establishments, native and European—for it is not likely that the mortality of cholera could be ascertained, with any degree of accuracy, among the native population.—Now the military class of people, both Asiatic and English, were those who would be much more likely to resist the choleric poison, from their habits, age, and other circumstances, than the lower grades of society in any country. To these circumstances may be added

the absence of all fear of contagion, and the prompt medical measures, voluntary assistance, &c. which were afforded. In addition to all these, let it be remembered that the first and most dangerous stage of cholera resembles, in all important points, the cold stage of a pernicious intermittent. A high range of temperature must surely be, in many respects, favourable to the restoration of the circulation, on which the safety of the patient depends. This, therefore, may be one cause why the ratio of mortality was, upon the whole, less in India than in Europe. In the former, too, the ventilation and cleanliness were infinitely greater than in the latter. Hence there was less of the typhoid fever that succeeds reaction—hence there was less infection in the disease. In Europe, and especially in Winter time, among the poor, the means of promoting reaction are infinitely more difficult than in a tropical climate—while, in crowded and filthy places, as in Sunderland, Newcastle, and Shields, the chances of infected atmospheres are, at least quadrupled. Notwithstanding this, the mortality has hitherto been much less than on the Continent. And we have reason to hope that, although the disease may be more extensive in Summer than in Winter here, the ratio of mortality will be less.

We shall now sum up the *conclusions* to which we have come, respecting the nature and treatment of the epidemic cholera *morbus*, or perhaps more properly speaking, the CHOLERIC-FEVER, in the form of a series of propositions submitted to the Westminster Medical Society on the 26th November last, by the Editor of this Journal.

PROPOSITIONS.

“ I. That in *epidemic* cholera, as in most other epidemics, a poison or sedative principle, whether emanating from the earth, from animal or vegetable bodies on the earth, or engendered in the air, strikes a predisposed individual, and, after an uncertain period of incubation, produces a train of phenomena, forming the subject of subsequent propositions. In *sporadic* cholera, the general or diffusive cause is absent; but when the common exciting

causes are strong, and the subject highly predisposed, severe or fatal cases will occur, where the *symptoms* cannot be distinguished from those of the epidemic cholera.

II. The effects of the choleric poison exhibit a great analogy to those produced by the virulent contagion of typhus, and the concentrated miasmal exhalations that give rise to malignant fevers, remittent and intermittent; such as have been seen in Batavia and other highly malarious places.

III. This poison shows its effects according to the evidence of our senses, *first*, on the nervous system, as evinced by the prostration of strength,—by the affection of the head,—by the arrest of the secretions (dependent on nervous energy), and, in fact, by a depression of the whole of the sensorial functions, as well as those of the organic life.

IV. The *secondary* effects of the choleric poison are shown in the vascular system. The heart acts feebly,—the circulation recedes from the surface, and the blood accumulates in the vessels of the internal organs; decarbonization and calorification cease, or are greatly diminished; the temperature of the body falls to that of surrounding inanimate substances; paleness is changed to blueness; and the influence of the ganglionic system of nerves seems to be nearly suspended, if not annihilated.

V. It is at this period that nature appears to make violent, but too often unsuccessful, efforts, to restore the broken balance of the circulation and to re-establish the secretions, by sickness and purging; the ejected fluids being exudations rather than secretions.

VI. If nature does not succeed by the above-mentioned efforts to restore circulation, secretion, and consequently oxygenation and calorification, these efforts themselves prove auxiliaries to the choleric poison in destroying life.

VII. We are not, in our present state of knowledge, certain whether the spasms be merely the effects of the poison on the nervous system, or an effort of nature to resist it; but they, like the sickness and purging, tend ultimately to exhaust the powers of life.

VIII. If nature, (by which I mean the constitution), whether with or without

aid, be able to resist the first or depressive shock of the poison, and institute a reaction in the system, that reaction, in a great majority of cases, becomes a fever, exhibiting a new train of phenomena, and demanding a different mode of treatment. If this view be correct, it would lead to the inference that the choleric symptoms constitute the first or cold stage of a choleric fever.

IX. If reaction, with restoration of circulation, secretion, and oxygenation, do not take place, the patient dies in a state of asphyxia, the intellectual powers often remaining but little impaired, till the last glimmer of the lamp of life is extinguished. This has been often witnessed in concentrated miasmal fevers, both within and without the tropics.

X. PATHOLOGY.—All the changes which present themselves in the dead body are, in my opinion, *effects*, not causes, of the disease; with the exception of the congestion of black blood in the internal organs, which is almost the only phenomenon observable when cholera terminates fatally in a few hours. The traces of inflammation in various organs after death, indicate the causes or effects of the reactive fever, rather than of the cholera which precedes that fever.

XI. TREATMENT.—As we have no means of expelling or neutralising the poison, we can only endeavour to counteract its effects, and to assist nature in her remedial movements.

XII. The primary or essential indication is to restore the equilibrium of the circulation. That equilibrium effected, a restoration of secretion, calorification, and oxygenation, follows.

XIII. The balance of the circulation is to be restored partly by internal, partly by external means; but always by several means simultaneously employed at the very earliest period of the disease.

XIV. Venesection may appear a desperate remedy, but we have a desperate disease to combat. I proposed this measure many years before the epidemic broke out, and it has been adopted to a very considerable extent, both in Asia and Europe. I proposed, and would still propose, venesection with a two-fold view: first, to relieve the heart and internal organs from a portion of

that deluge of black blood in which they may be said to be drowning ;—secondly, to turn, as it were, the tide of the circulation from the centre to the surface of the body. This measure I would chiefly confine to the young, the robust, and the previously healthy, and in them contemporaneously with, or subsequently to, the measure which forms my next proposition.

XV. The first internal remedy which I propose, both in aid and in imitation of nature, is a stimulant emetic, as infusion of mustard seed, or what perhaps would be better, the sulphate of zinc. I propose this from a conviction founded on observation, that of all the means which nature or art can bring into operation, the act of *full vomiting* is the most powerful in driving the blood from the trunks to the capillaries—from the internal organs to the periphery of the body. It is also the most universal excitant of secretion in every glandular structure of the living machine. Nausea and retching are quite different in their effects from the operation of *full vomiting*. Nausea and retching depress the power of the heart and nervous system, and prevent the blood from flowing to the surface ; *full vomiting* impels the circulation with such force into the superficial vessels, that it is extremely difficult to stop the flow of blood from the orifice of a vein during vomiting. I have seen the blood come from a vein under such circumstances, with all the characters, or at least the appearance, of arterial blood. This proposition is well exemplified by sea-sickness, of which I have had painful personal experience. An unfortunate landsman bears a close resemblance, during the first storm at sea, to a man with cholera. He staggers about the deck, or clings to the railings of the lee-gangway, striving to keep down the rebellious heavings of his own stomach. But all wont do ; up it comes ; and during the first vomitings I have seen the blood gush from mouth, nose, and even the eyes of the sea-sick sufferer. From being actually blue with nausea, his face becomes red with vomiting. But the cause of the sickness still continuing, he ultimately becomes pale and exhausted ; he is like a man

who takes a fresh dose of tartar emetic after each paroxysm of vomiting. The wonder is that he does not die ; some have died. It is curious that Cœlius Aurelianus, who gives the best ancient account of cholera morbus, places seavoyaging among the causes of that disease.

It is but justice to state that Mr. Boyle proposed and practised *full vomiting* in the epidemic cholera ten years ago ; and I have the very best authority for affirming that this practice, when it was pursued on the Continent, was eminently beneficial.

XVI. As soon as vomiting has produced its salutary effect on the circulation, or has failed to produce that effect, after a fair trial, I would propose diffusible stimuli with calomel and opiates, but not in immoderate doses. Brandy and laudanum, as the most readily procured, and the least likely to be loathed, are perhaps the best. But the choice of stimulants must be left to the practitioner ; and the danger of inducing subsequent inflammation should be carefully borne in mind. Calomel alone would probably be the best medicine after the emetic.

XVII. The remedies above-mentioned, in moderate but efficient doses, seem to impart vigour to the heart and nervous system, through the medium of the stomach, while they mitigate the spasms, and restrain the useless or injurious exudation of fluids from the intestinal canal, the mercury changing that exudation into secretion.

N.B. Would not the inhalation of oxygen gas be beneficial ?

XVIII. The external remedies are three—heat, friction, and counter-irritation. These three means should be employed, not only simultaneously with respect to each other, but contemporaneously with the internal remedies. They should also be so employed, that the patient may not be required to throw a single voluntary muscle into action. Every muscular movement, even that of sitting up in bed, is prejudicial, or absolutely dangerous, during the exhausting orgasm of cholera. An apparatus permitting the application of heat, friction, and counter-irritation, without the necessity for any muscular

exertion on the part of the patient, will be shown to the Society.

Query—As the cramps and spasms are chiefly confined to the extremities, and as the exhausting pain of these cramps is in proportion to the contraction and swelling of the affected muscles, would not firm compression by a bandage mitigate the spasms? Patients in cholera often cry out for the most violent extension and pressure of the cramped muscles.

XIX. PROPHYLAXIS. —Conceiving myself, as well as every member of this Society, bound to abstain from all discussion of the question of contagion, I shall condense the subject of prevention into four words,—temperance, cleanliness, ventilation, and fearlessness:—in fine, the pursuance of all those means which tend to preserve general health, and the avoiding of all those causes which predispose to the common, or indigenous diseases of our own climate.”

In respect to the cause of the epidemic, we have no reason to alter the conclusions to which we have come on former occasions—namely, that the disease originates in causes of which we are ignorant—and over which we have no control—and that, in crowded, filthy, and ill-ventilated places, it takes on an infectious character, tending still farther to propagate, and heighten the danger of, the disease. This is the doctrine which we have always maintained, from an unbiased consideration of facts. We shall be ready to alter our opinion, whenever our experience and reflection shall convince us that we are wrong. The disease has now come within the range of observation; and English practitioners will not have to ground their conclusions on reports from the banks of the Ganges, the Ural, the Wolga, the Euphrates, or the Nile, *only*—they will probably have ocular demonstration—and to that ordeal we cheerfully submit.

OBSERVATIONS ON THE NATURE AND TREATMENT OF CHOLERA, DRAWN UP BY DRs. RUSSELL AND BARRY, 13th December, 1831.

“ Of the two great classes of functions performed by the organs of which

man is composed, one only is attacked in this disease. The operations of the senses and of the intelligence are either left untouched, or are affected but in a secondary manner.

Those functions, on the contrary, by which existence as a living being is preserved,—those complicated powers, by means of which we are for ever appropriating and converting into a part of ourselves portions of the matter around us,—are all and at once deranged by the attack of this terrible malady. Nutrition is annihilated; respiration becomes difficult, irregular, and inefficient; the involuntary muscles no longer perform their task; the voluntary are drawn into contractions by other powers than the will; the blood ceases to circulate; its physical properties are altered; its serous portion is suddenly thrown out upon the intestinal mucous surface of the body; the secretions are all arrested; and animal heat is no longer produced.

Under such rapidly destructive, and almost universal derangement of function, the most energetic efforts should be directed to reproduce what the disease has rendered nature unable to keep up, viz.

1st. Fluidity, heat, and motion in the blood.

2dly. Regulated action in the voluntary and involuntary muscles.

Lastly, but above every other consideration, renewed energy in the nervous centre, the source of all vitality and function.

No remedy at all approaching to the nature of a specific has been as yet discovered for this disease. In fact, no one mode of cure can be usefully employed under all the circumstances of any disease. The grades of intensity and the grouping of the symptoms with which spasmodic cholera makes its attacks, vary with the conditions of the subject; its treatment, therefore, must vary with these grades and conditions.

The leading preliminary symptoms generally are, either diarrhoea, spasms, apoplectic vertigo with nausea, imperfect vomiting, or various combinations of these symptoms.

When the diarrhoea affords time for distinct treatment, it ought to be ar-

rested at once by the most prompt and efficient measures ;—by opium in moderate doses ; astringents ; local bleeding by leeches, if the subject be plethoric ; by cordials and sulphate of quinine, if there be cold sweats ; by confining the patient strictly to bed, and keeping up heat ; by diet ; by emetics.

Should spasms be the first and leading symptom, subnitrate of bismuth, cupping along the course of the spine, cordial, and antispasmodic medicines, opium, frictions, and dry warmth are indicated.

But when the patient is suddenly seized with vertigo, nausea, coldness, loss of pulse, blueness of the skin, shrinking of the features and extremities, with more or less watery discharges and cramps ; constituting an aggravated case of the worst type ; whether this state shall have come on without warning, or shall have supervened upon either or both of the preliminary sets of symptoms already mentioned, time must not be wasted upon inert measures. Such a patient will inevitably perish, and within a few hours, if the paralysed vital functions be not quickly restored.

Let him then be immediately placed between warm blankets ; and should no medical person be at hand, let two table-spoons full of common kitchen salt, dissolved in six ounces of warm water, be given immediately, and at once if he be an adult. Let dry and steady heat be applied along the course of the spine, and to the pit of the stomach (if no other means be at hand) by a succession of heated plates or platters. Let the upper and lower extremities be surrounded with bags of heated bran, corn, ashes, or sand, and assiduously rubbed with a warm hand, and a little oil or grease to protect the skin. Energetic, complete vomiting will probably be produced by the salt ; and perhaps bilious purging, with tenesmus.

Should a medical man be on the spot, a moderate bleeding, if it can be obtained, would be desirable, previously to or immediately after the administration of the salt, or of any other emetic which may be preferred.

The extensively deranged action of

those organs whose nerves are chiefly derived from, or connected with the spinal marrow, the anatomical characters found about that great source of vitality after death, in many cases of this disease, together with the success stated by Dr. Lang, chief physician at Cronstadt, to have attended the practice mentioned below, founded upon these views, in 12 out of 14 aggravated cases, fully justify the following recommendation.

In cases such as those just described let the actual cautery be freely applied to one or two or more places on either side of the spine, as if for the purpose of forming good sized issues. Should the heated iron have produced any excitement of the nervous power, and the salt emetic have caused any portion of the bile to flow through its proper duct, a great step will have been accomplished towards recovery from the stage of collapse. Cordials and opiates judiciously administered ; sinapisms and other external stimulants ; mercurials with mild aromatic aperients, which the intelligence and activity of British medical practitioners will not fail to adapt to the actual circumstances of each case, will conduct the patient safely to the stage of re-action.

The organs during the collapse of this disease, probably owing to deficient vitality, often give no indication of having been acted upon by repeated doses of certain powerful medicines, which under other circumstances would have produced the most decided effects. It is therefore suggested that this temporary insensibility of the system should not inculcate the administration of such quantities as could, by accumulation, when the organs begin to recover their vitality, give rise to unfavourable results.

Thirst being a most distressing symptom of this disease, the quality and temperature of the drink should perhaps be left to the choice of the patient ; but the quantity taken at a time should not exceed four ounces, and should be acidulated with nitrous acid, if the patient will bear it.

Should the disease prove extensively and rapidly epidemic in a large community, it would be prudent to establish stations at convenient distances

from each other, where medical assistance and medicines might be procured without the risk of disappointment or delay. The details of these arrangements are left to the wisdom of local boards of health.

As to the symptoms of the consecutive stage of feverish reaction in cholera, they differ but little, if at all, from those of ordinary typhus, except, perhaps, in the greater rapidity with which they but too often run to a fatal termination; and as this kind of fever is treated in no part of the world with more success than in England, the entire management of this stage of the disease is left to the zeal and science of the profession at large.

Attentive nursing, and assiduous, well-directed rubbing, are of the utmost importance; a strictly horizontal position, however, must be maintained until the heart shall have, partly at least, recovered its action. An erect or even semi-erect position, during the collapse, has been often observed to produce instant death. Warm baths, therefore, for this and other reasons, are worse than useless; evaporating fluids, and indeed all moisture applied to the skin, seem to be contra-indicated for obvious reasons. Hot air baths, so contrived as to be applicable in a recumbent posture, and admitting access to the patient for the purpose of friction, may be of use.

I have the honour to be, Sir,

Your most obedient Servant,
E. STEWART, Chairman."

Our readers will readily perceive that the above document presents exactly the same views, as to the nature and treatment of cholera, which Dr. Johnson's propositions contain, as laid before the Westminster Medical Society on the 26th November last. The preponderance of disease or rather oppression in the ganglionic system of nerves and the functions thereby supported—the comparative immunity of the sensorial or intellectual functions—the arrest of secretion, calorification, secretion, and oxygenation—the intestinal exudations—in short, every pathological phenomenon contained in Dr. Johnson's propositions, is embodied, and in nearly

the same terms, in the code of the Central Board of Health. We challenge any one to point out a single iota of discrepancy. This is no trifling source of gratification. But there are some parts of the document which, we apprehend, are not very guardedly composed. Surely Drs. Russell and Barry were hasty in declaring that, in cholera, "the blood ceases to circulate." The instant that the blood *ceases* to circulate, syncope or death ensues. Some degree of circulation *must* continue, so long as the heart continues to act—when the heart ceases to act, circulation and all the phenomena of life cease also. A man in syncope is dead while syncope lasts. The expression, therefore, of the Board is too strong—and is not correct.

Again, the Board avers that the sensorial or intellectual functions are not at all, or only secondarily affected in cholera. How does this assertion quadrate with the information that "the leading premonitory symptoms" include "apoplectic vertigo." But appealing from words to things, we maintain that the impression of the cause of cholera, whatever it may be, is manifested on the *whole* of the nervous system—cerebral as well as ganglionic—though the *latter* is most affected. The prostration of strength, which invariably shews itself at the very onset of the disease, is peculiarly the result of depression of the cerebral system. The spirits also are depressed, however clear the intellectual faculties may remain in the course of the disease. Besides, how is it that the spinal marrow, which is merely a prolongation of the brain, and as much unconnected with the ganglionic system as the brain itself,—how is it, we say, that this organ is pointed out as a main seat of the disease, and the actual cautery recommended in its vicinity? Surely the spinal nerves are more connected with voluntary motion than the ganglionic nerves. We have the authority of Mr. Searle and the French physicians, that the spinal marrow shews no particular signs of disease—and we venture to predict that dissection, in this country, will shew the hypothesis, for such it is, to be totally untenable. Indeed the Board itself

proves this, by considering the ganglionic system of nerves to be chiefly and *primarily* affected. So much for the pathology. In respect to therapeutics, the Board has prescribed precisely the same means which Dr. Johnson pointed out. External heat, friction, and counter-irritation, with rigid adherence to the horizontal position. As to internal remedies, Dr. Johnson's proposals are almost all adopted. Emetics—venesection—and afterwards cordials, mercury, &c. are recommended.

Upon the whole, and with the few animadversions which we have made on certain pathological points, we have great reason to be gratified that none of our essential therapeutical recommendations have been contra-indicated by the BOARD OF HEALTH.

PICTURE OF CHOLERA IN SUNDERLAND.

We have alluded to the impropriety of drawing pictures from the extreme cases of any disease, viz. small-pox, and holding them up *in terrorem*, leaving in the back ground all the minor but more numerous shades of a malady. This has been done with cholera by too many of our medical portrait painters. The following curious picture of cholera in Sunderland has lately been published by Dr. Tinn of Newcastle. We must somewhat abbreviate the document.

Anxious to view this terrible malady, Dr. Tinn repaired to the cholera hospital in Sunderland, where five cases were said to be in the second stage of the disease.

The first patient was Edward Downs, aged 85, who had been ill for some time, but became worse on Friday night, 9th December. This patient, from the symptoms which he detailed, appeared to have had some inflammation of the mucous membrane of the bowels. "His abdomen was soft and natural—some pain there on pressure—occasional pains in his legs—tongue dry but clean—thirst—pulse full and natural—skin warm and natural." *This was the second stage of cholera.* Dr. T. avers that "he never had any symptom of the first stage"!

Second Case. Mary Wildon, aged 70, says that she has occasional pain in her head—no pain in any other part—pulse

natural—tongue clean and moist—skin natural. "In my opinion there was nothing the matter with this woman, nor did she appear to have had any disease whatever." *Still she was in the second stage of cholera.*

Third Case. Eleanor Appleby, aged 63, an idiot. She complains of pain in her back—no appetite—thirst—tongue red in the middle, but furred at the edges—pulse small and quick—pain in her side—bowels hard and contracted. "She never has had any symptom of cholera morbus." But she is now in the second stage.

Fourth Case. Susan Roach, aged 40, says she has been out of health for some time. Tongue is moist and clean—skin warm and natural—pulse small and rather quick—pain in her left side—has been sick this morning—no purging. Second stage of cholera.

Case five. Eliz. Snipe, aged 20. Has been a servant in the hospital since its commencement—is stout and healthy-looking—has been rather poorly since Monday last—complains of pain in her head—pulse rather quick—skin warm and moist—tongue clean, &c. Dr. T. observes that—"there was not a single symptom or appearance that could induce any one to believe that she was in the second stage of malignant cholera, and I think it is clear that she never had the primary stage."

Dr. T. now went in pursuit of a case in the first stage, and applied to Mr. Embleton, who attends the poor, and reported eight cases on Sunday, Dec. 11th, 1831. Two of these cases Dr. T. had an opportunity of seeing on the same day, in company with another medical gentleman. One of these was a fish-woman, aged 70, "who lived in a most miserable situation." She had been in the habit of taking "something comfortable," whenever she could get it. She had sickness—dry and furred tongue—loose fetid evacuations—no pain in the stomach or bowels—no spasms—no cold skin—no suppression of urine—no blueness—no prostration of strength—no shrinking of the fingers or toes—"in short, no symptom of cholera." "This was one of the cases reported under the term malignant cholera." The other case was a man of

the name of Nicholson, residing in Sailor's Alley, "whom we found with no symptom whatever of cholera, either of the first or second stage."

Dr. T. winds up in the following words: "It is almost impossible to repress our indignation that such common and every-day occurrences should have excited so much unnecessary alarm." "Mr. Embleton attends the poor of Sunderland; it is no wonder, therefore, that he is called to so many old and poor people who are suffering at this season of the year from disease. If I may be allowed to form an opinion from what I could observe yesterday (Sunday) the malignant cholera morbus is not likely to subside so long as there is disease or death in Sunderland."

We have not the smallest doubt that during the panic, almost every disease, and almost every death will be laid to the account of cholera morbus!! But a time will come when men will have leisure to portray the epidemic in all its shades and gradations, without exaggerated, or at least exclusive representations of its intensest forms. We have much need of a fair and unbiassed picture of the EPIDEMIC CHOLERIC FEVER, in the North of England!

The following extract from the TIMES reporter, (Dec. 15th), an ultra-contagionist, will afford some clue to the "picture of cholera" above.

"The proportion of *mild cases* that have occurred in Sunderland is, *beyond any ordinary measure of comparison*, greater than those recorded during the inroads of the cholera in India."* "In Sunderland, the mild cases have been met with during the whole period of the invasion, and they have often appeared in the same family of persons, or in the same locality, with those of the more dangerous character. In this way, I have observed that one member of a family may have the disease commencing slowly in the shape of a watery purging—another member may have, at the first onset, the mild symptoms of cholera fully developed; while a third will have the attack in the most rapid and violent type."

* It is to be remembered that the mortality in India was infinitely less than in Europe.—Ed.

This speaks pretty plainly as to the number of cases in Sunderland and Newcastle. It shews clearly that the epidemic is a gastro-intestinal disease, assuming all forms and grades, from the simplest diarrhoea up to asphyxial fever, according to the predisposition of the individual, the insalubrity of the locality, and the strength or dilution of the epidemic cause.

How is Cholera propagated? By an American physician. This little pamphlet, published by Mr. Millar, of Henrietta-street, Covent Garden, contains many sensible remarks. We shall endeavour to find space for a few short extracts.

"There are so many evidences of the causes of fatal fevers originating under certain conditions of the atmosphere, in all parts of our globe, and disseminated through the air, sometimes slowly, and sometimes rapidly, over vast regions,—the disease appearing in the same type at different places, with greater or less mortality,—that the fact may now be considered as well established. The medical history of England abounds with interesting matter upon this subject. That the Plague, Yellow Fever, and perhaps the Asiatic Cholera, thus originate and are disseminated, is very probable; for these diseases, if they were communicable, like Small Pox, and capable of being multiplied like it, through the morbific secretions of the body, would long since have visited the four quarters of our earth with the most awful destruction of the human family. That infectious diseases, in their progress, obey very different laws, is, however, evident from the well-recorded testimony we possess of their manner of appearance and disappearance. They are all the endemics of certain latitudes; but sometimes change their characters, and become epidemic, and very mortal in their course."

The author thinks that, in respect to yellow fever, vessels lading at the wharfs of cities, where the disease prevailed, have taken it with them to distant climes, without infecting the crews, and then introduced it with the discharge of their cargoes. We apprehend that few people beyond the At-

lantic entertain this opinion at present. The following passage contains more important truths.

" The first cases, in all epidemics of this description, are usually the most fatal ; and where the infected air has been pent up in narrow and confined streets, the disease has often been observed to spread in a direction corresponding with the currents of air. A knowledge of this fact has led to the immediate removal of the citizens, and the boarding up of those streets in which the pestilential air is known to exist. A great portion of the population of the city of Baltimore was thus saved in the year 1819, when this disease appeared in that city in a mortal form."

" How the exhalations so noxious and fatal to human life are generated, it is best at once to say, we are perfectly ignorant; *causa latet, vis est notissima*, is perfectly applicable here; and, without entering into any theory or speculation upon this interesting subject, my whole aim is to direct the attention of the medical profession, at the present important crisis, to a strict observation of the manner in which the Asiatic Cholera is disseminated : for upon this correct knowledge must depend all preventive means and the safety of the population. It may be a disease communicable from body to body, and obeying, like Small Pox, all the laws of a contagious disease ; but it has occurred to the writer, from what he has read upon the subject, that Cholera, like Yellow Fever, has in truth no common attribute of a disease strictly contagious, and that we must look for some other solution of the manner in which its germs, so fatal to life, are produced and sown."

" An early removal of the population from the sources of infection, and an immediate interdiction of the healthy from diseased parts of a town, are of the first importance in arresting many of our epidemic diseases ; and, should the Asiatic Cholera prove thus communicable from one to another, will be the only efficacious means which can be resorted to, and by which we can arrest its course, or prevent its communication through the foul air of vessels coming

from infected ports: The contagious nature of this disease has been rather hastily inferred from the fact of its following, both in Asia and Europe, the great rivers and masses of population ; for it accords with observations both of ancient and modern times, that many diseases, such even as are not ranked as contagious, are diffused over Continents in a direction contrary to the currents of air, and with a certainty which defies all human means to avert or arrest, and that these diseases are generally mild when extensively diffused, and become malignant when the cause is concentrated. Now, it is not difficult to conceive that a concentration of the cause of Cholera, producing its malignant form, should take place in camps or in the crowded or ill-ventilated portions of cities, generally inhabited by the poorer part of the population, and that in this concentrated form it should be carried along the courses of rivers in vessels, or over the highways of nations. What medical man is there who does not know the fatal effects of confining any quantity of diseased persons to narrow and ill-ventilated apartments ? Yet, will this be called contagion ? Small Pox produces its impression fully wherever taken, and multiplies itself. Not so with jail or hospital fever, which we all know to be infectious only at the source whence it emanates, or through clothes which have not been properly ventilated."

The author appropriately instances the epidemic influenzas of the United States. They originate in the Autumn, on the borders of the great lakes, and after passing over the Continent, in a direction parallel with the sea, " with a certainty the most extraordinary," disappear in the milder climate of the Gulph of Mexico ; or are lost in the boundless forests beyond the Mississippi.

" The Influenza, in its course, rarely spares any of the population, but is seldom fatal, except in cases of old people. So regular is its march, that its appearance in one town is the certain signal of the next becoming afflicted with it, and sooner or later, according to the distance which separates them. The singular appearance, also, a few years ago, in the Antilles, of a fever with

rheumatic symptoms, familiarly called the Dangue, which, after passing through the islands, visited the coast on the Gulph of Mexico, and extended itself from the sea to the mountains, and as far north as the Capes of the Chesapeake, is another instance. The universal diffusion of this disease was so remarkable, that few, or none of the population escaped in those regions through which it extended. It was communicated through the atmosphere, and appeared capable of being propagated only where the climate was regulated by a certain degree of temperature, for no restrictions whatever were imposed upon intercourse of the population from south to north. This disease was believed to be highly contagious, and in the West Indies, where it first appeared, was declared to be imported, as all bad things are, from Africa."

The obscurity which attends the propagation of epidemic diseases, and which has puzzled the faculty in all ages, ought to teach our controversialists a little moderation. It will probably be found that, in cholera, as in other epidemics, all known laws will be insufficient to explain the mode of propagation. Let us carefully observe facts, and wait the great teacher, TIME, for unravelling the mysteries of the reigning epidemic.

P. S. 17th Dec. 1831. Dr. O'Shaughnessey, who is now in Sunderland, reporting on cholera, gives it as his opinion that the early cases of common cholera in Sunderland were the same disease as now prevailing, only in a milder form. Now these cases prevailed ever since July last, according to the testimony of the best physicians in Sunderland and Newcastle. This admission cuts off one head of the hydra—the importation from Hamburg, for the disease did not then prevail there. Dr. O'Shaughnessey very appropriately compares the effects of the choleric poison with the effects of any other poison in small, moderate, and excessive doses. Does this quadrate with a specific poison generated in each individual, or with a poison diffused generally in the air—in other words, an EPIDEMIC INFLUENCE? That an epidemic disease, often of a

most malignant and fatal kind, prevails in Sunderland, Newcastle and vicinity, there can be no doubt. But that it softens away into all the shades between "blue cholera" and the most common stomach and bowel-complaints—all comprehended in, and reported as, the NEW DISEASE, we have also no doubt.

We do not subscribe entirely to the Chinese philosophy, which looks upon every epidemic as a blessing from Heaven, to carry off the redundant population; neither do we believe, with Dr. George Gregory, that cholera was sent by DIVINE PROVIDENCE, like small-pox, to scourge mankind, and to remain with man as a fatal legacy*—but we are among those OPTIMISTS, described in Rasselas, who believe that "every thing is for the best"—and we firmly believe that CHOLERA, if it pursues its usual course, and selects its usual victims, will, in the end, do infinite good: It will strike the drunken, the debauched, and the profligate, in the lower classes of society—and if it invades the upper classes, the same description of people will be its victims. That a small proportion of innocent, virtuous, and temperate people will suffer, there can be no doubt; but the tares rather than the good grain will assuredly be swept away. Do the GODLY accuse us of cold and calculating philosophy? We refer them to Scripture. A sparrow cannot fall, without the permission of Providence—much less man, in thousands and tens of thousands.

But mankind, however religious, have a wonderful propensity to take physical means of guarding against disease. The cholera, which seems to visit intemperance and filth with inexorable cruelty, will have more effect in restraining or removing these predispositions than all the harangues from the pulpit—than all the precepts from the mouths or pens of physicians!

* Dr. Gregory, with great naïveté, offered his opinion, in the very same breath, in the Westminster Medical Society, that, if a wall (he did not state the height) could be erected round Great Britain, the same scourge, sent by PROVIDENCE, would be kept out!!

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OR,

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1. Brand's Lunacy Case. A full Report of this most interesting and extraordinary Investigation, including copious Animadversions on the principal Actors in the Drama, &c. By CHARLES DUNNE, M.R.C.S. &c. Octavo, pp. 132. London, 1831.

2. The Principles of Lithotropy; or a Treatise on the Art of extracting the Stone without Incision. By BARON HEURTELOUP, Doctor of the Faculty of Medicine, Paris. Octavo, pp. 486, with numerous Plates. Whittaker, London, October, 1831.

3. Lectures on Population, Marriage, and Divorce, as Questions of State Medicine, &c. By MICHAEL RYAN, M.D. Small 8vo. pp. 72. Renshaw and Rush, 1831.

4. Elements of Surgery. By ROBERT LISTON, Senior Surgeon to the Royal Dispensary of Edinburgh, &c. Octavo, pp. 334. Part the Second. Edinburgh and London, 1831.

5. Cases of Insanity, with Medical, Moral, and Philosophical Observations and Essays upon them. By M. ALLEN, M.D. Part I. Vol. I. Octavo, pp. 212. 1831.

6. A Practical Guide to Operations on the Teeth; to which is prefixed, a Historical Sketch of the Rise and Progress of Dental Surgery. By JAMES SNELL, Dentist, M.R.C.S. Lecturer on Diseases of the Teeth, &c. Octavo, pp. 207. With Plates, 1831.

7. An Exposure of the continued Misrepresentations by Richard Phillips, Esq. in his Attempt to vindicate himself from Dr. Reid's first Exposure of his Misrepresentations, &c. By DAVID BOSWELL REID, M.D. F.R.S.E. Lecturer on Che-

mistry, &c. Octavo, pp. 16. Edinburgh, 1831.

 *Bella, horrida bella!*

8. Colour, Images in the Brain; with a View of the Bearings of their Detection on Philosophy: to which are added, Strictures on the Abstract of the Subject, printed by the Royal Soc. By J. FEARN, Esq. Octavo, pp. 39, sewed. Sept. 1831.

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10. General Remarks on the Health of English Manufacturers, and on the Need which exists for the Establishment of Convalescents' Retreats, as subservient to the Medical Charities of our large Towns. By JOHN ROBERTON, one of the Surgeons to the Manchester Lying-in Hospital, &c. Octavo, pp. 36. London, Oct. 1831.

11. A Manual of Midwifery, or Compendium of Gynaecology and Puericulture; comprising a new Nomenclature of Obstetric Medicine, with a concise Account of the Symptoms and Treatment of the most important Diseases of Women and Children, and the Management of the various Forms of Parturition. Illustrated by Plates. By MICHAEL RYAN, M.D. &c. Third Edition, small 8vo. pp. 737. Renshaw and Rush, 1831.

 *This third edition is greatly enlarged, and now forms an extremely useful and cheap compendium of obstetrical knowledge.*

12. Operative Surgery. Maingault's Illustrations of the different Amputations performed on the Human Body; represented by Plates designed after Nature, with Alterations and practical Observations. By WILLIAM SANDS COX, Lecturer

on Anatomy and Surgery at the Birmingham School of Medicine, and Surgeon to the General Dispensary. Folio, eight Plates, with Letter-press Explanations, &c.

13. A Synopsis of the Bones, Ligaments, Muscles, Blood-vessels, and Nerves of the Human Body. By WM. SANDS COX, Surgeon to the Dispensary, and Lecturer on Anatomy, &c. at the School of Medicine in Birmingham. Octavo, pp. 310, with five Plates. October, 1831, price 9s.

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15. A. Cornelii Celsi de Re Medica Libri Octo, ex recensione Leon. Targæ, accidunt J. Rhodii Dissertatio de Celsi Vita, &c. Editio Secunda accuratissime emendata Opera et studio GEORGI FREDERICI COLLIER, ex Aula Magd. Oxon. E. Colleg. Med. Lond. &c. M.D. Londini, Typis Valpianis, 1831. Octavo, pp. 342.

A Translation of the eight Books of Celsus on Medicine. Second Edition, carefully revised and improved. By G. F. COLLIER, M.D. Octavo, pp. 363, 1831.

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17. The History of the Contagious Cholera; with Facts explanatory of its Origin and Laws, and of a rational Method of Cure. By JAMES KENNEDY, M.R.C.S. Octavo, pp. 291. October, 1831; with a Map.

18. Researches to establish the Truth of the Linnæan Doctrine of Animate Contagions; wherein the Origin, Causes, Mode of Diffusion, and Cure of Epidemic

Diseases, Spasmodic Cholera, Dysentery, Plague, Small-pox, Hooping-cough, Leprisy, &c. are illustrated by Facts from the Natural History of Mankind, of Animals, and of Vegetables, and from the Phenomena of the Atmosphere. By ADAM NEALE, M.D. Physician to His Majesty's Forces, &c. Octavo, pp. 258, with a Plate. October, 1831.

19. Caution to the Public; or Hints upon the Nature of Scarlet Fever, designed to show that this Disease arises from a peculiar and absolute Virus, and is specifically infectious in its mildest as well as in its most malignant Form; including cursory Remarks upon Plague, and other Pestilential Diseases. London, October, 1831. Octavo, pp. 165. Highley, Fleet-street.

20. A Memorial presented to the Medical and Surgical Officers of the Worcester, Salop, Birmingham and other Infirmarys, on the Abuses existing in the public Hospitals, &c. Octavo, pp. 12. 1831.

 We fear Mr. Webb is somewhat visionary in his schemes and proposals. They will never answer.

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 This is compiled from the best authorities, with immense industry and great judgment.

22. An Ordo Verborum of the First and Third Books of Celsus, &c. carefully arranged by G. F. COLLIER, M.D. Duodecimo, pp. 113. Simpkin and Marshall, 1832.

23. Considerations pratiques sur certaines Affections de l'Uterus, en particulier sur la Phlegmasie Chronique, avec Engorgement du Col de cet Organe, et sur les Avantages de l'Application immédiate des Sangsues méthodiquement employée dans cette Maladie. Par J. N. GUILBERT, M.D. Octavo, pp. 126. Paris, 1831.

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25. Observations on the healthy and diseased Conditions of the Breast-milk; the Disorders frequently produced in Mothers by suckling; and numerous illustrative Cases, proving that, when protracted, it is a common Cause, in Children, of Water in the Brain, &c. By EDWARD MORTON, M.D. Octavo, pp. 56. 1831.

26. Lectures on Anatomy; interspersed with practical Remarks. Vol. III. By BRANSBY COOPER, F.R.S. Surgeon of Guy's Hospital, Lecturer on Anatomy, &c. Royal 8vo. pp. 300. Oct. 1831.

27. Part I.—The Principles and Practice of Obstetric Medicine, in a Series of Systematic Dissertations on Midwifery, and on the Diseases of Women and Children, illustrated by numerous Plates. By DAVID DAVIS, M.D. M.R.S.L. Professor of Midwifery in the University of London, &c. Quarto, pp. 24, with a Plate. October, 1831. Price 2s. per Part.

28. An Essay on the Epidemic Cholera of India. By REGINALD ORTON, Surgeon, H. P. late of His Majesty's 34th Regiment of Foot. Second Edition, with a Supplement. Octavo, pp. 488, with a large Map, price 15s. Burgess and Hill, November, 1831.

See the article Cholera.

29. Remarks on the Cholera Morbus, containing a Description of the Disease, its Symptoms, &c. By H. YOUNG, M.D. formerly of the Hon. C. S. in Bengal. Octavo, pp. 78. Nov. 1831. Price 3s.

30. Observations on the Nature and Treatment of the Cholera Morbus, now prevailing epidemically in St. Petersburg. By GEORGE W. LEFEVRE, M.D. Physician to the British Embassy. Octavo, pp. 96. November, 1831.

31. The London Manual of Medical Chemistry, comprising an Interlinear Verbal Translation of the Pharmacopœia, with extensive Chemical, Botanical, The-

rapeutical, and Nosological Notes, &c. By WILLIAM MAUGHAN, Surgeon and Lecturer on Chemistry, &c. Duodecimo, pp. 422. November, 1831. Price 10s.

This is designed for Students, and to them it will prove extremely useful. It is multum in parvo.

32. A practical Compendium of Midwifery; being the Course of Lectures on Midwifery, and on the Diseases of Women and Infants, delivered at Bartholomew's Hospital by the late ROBERT GOOCH, M.D. Prepared for Publication by GEO. SKINNER, M.R.C.S. Small 8vo. pp. 358, with an Index.

33. The Principles of Surgery. By J. SYME, F.R.S. &c. Octavo, pp. 347, with a Plate. Edinburgh and London, Nov. 1831.

34. Traité du Cholera Morbus, considéré sous le Rapport Medical et Administratif, ou Recherches sur les Symptômes, la Nature, et le Traitement de cette Maladie, et sur les Moyens de l'éviter. Par F. G. BOISSEAU, M.D. Professor at the Hospital of Instruction of Mentz, &c. Octavo, pp. 407. Baillière, London, Nov. 1831.

This and the following are very valuable volumes, and deserve especial attention at this moment.

Rapport sur le Cholera Morbus; lu à l'Academie Royale de Médecine, en Séance Générale, les 26 et 30 Juillet, 1831. Octavo, pp. 199. Baillière, London.

See above.

35. On the Propagation of Cholera. By Lieut.-Col. ROWLES.

36. Traité de Chimie, appliquée aux Arts. Par M. DUMAS. Tôme troisième. Octavo, pp. 784. Paris, Nov. 1831.

37. Engravings of Sir Astley Cooper, Bart. and John Abernethy, Esq. Painted by Sir THOMAS LAWRENCE and engraved by J. COCHRAN. Published by Fisher and Co. London.

These are the best engravings of these two distinguished surgeons that we have yet seen.

38. Practical Remarks on the Inutility

of the Hydrostatic Test in the Detection of Infanticide. By H. W. DEWHURST, Esq. Surgeon-Accoucheur, &c. To which is added, Observations on the Employment of a new Counter-irritant in the Cure of Diseases of the Chest. Duodecimo, pp. 36, 1831. Price 1s.

39. A Practical Medico-Historical Account of the Western Coast of Africa:—embracing a Topographical Description of its Shores, Rivers, and Settlements, with their Seasons and comparative Healthiness; together with the Causes, Symptoms, and Treatment of the Fevers of Western Africa; and a similar Account respecting the other Diseases which prevail there. By JAMES BOYLE, M.R.C.S. Colonial Surgeon to Sierra Leone, Surg. R.N. &c. Octavo, pp. 423. Highley, London, November, 1831.

 We regret that the CHOLERA has prevented us from reviewing this excellent Work in our present Number.

40. Observations on Cholera; comprising a Description of the Epidemic Cholera of India, the Mode of Treatment and the Means of Prevention. By T. G. PETTIGREW, F.R.S. &c. Octavo, pp. 37, Highley, Nov. 1831.

41. The Catechism of Health; or plain and simple Rules for the Preservation of Health and the Attainment of long Life. To which are added, FACTS respecting the Nature, Treatment, and Prevention of Cholera. By A. B. GRANVILLE, M.D. F.R.S. &c. Small 8vo. pp. 336. Dec. 1831.

 This little manual will do a vast deal of good among the public in general. The portion which treats of cholera will also have a very beneficial influence in diminishing cholera-phobia.

42. Annals of Sir Patrick Dun's Hospital. No. I. for the Year ending 5th of January, 1831. Small 8vo. pp. 72. Dublin, 1831.

 To be noticed in our next.

43. The History of the great Plague in London in the Year 1655; containing Observations and Memorials of the most remarkable Occurrences, both public and private, during that dreadful Period. By a CITIZEN. A new Edition, with an in-

-troduction Preface. Small 8vo. pp. 311. Renshaw and Rush, Dec. 1831.

 This little volume will be read with intense interest at the present moment.

44. A Treatise on Cholera Morbus, from the French of Le Baron Larrey. By HENRY PATERSON, M.R.C.S. Octavo, pp. 29, sewed. Dublin and London, Dec. 1831.

45. A Critical Exposition of Phrenology, being a Lecture delivered at the Philosophical Institution, Birmingham. By CHARLES CORAY, M.R.C.S. Octavo, pp. 20. Birmingham, 1831.

 Mr. C. must have been somnambulant, when he sent forth this blatant supplication for notoriety.

46. Lectures on the Vertebrated Animals of the British Islands:—Part I. On the British Mammalia; with a Tabular View of them, arranged according to Blumenbach's System, a Synopsis of all the Genera and Species, and an Appendix, containing a Sketch of extinct Animals. Octavo, pp. x. and 96. Birmingham and London, 1831.

 This Part includes four lectures, comprising an extremely accurate natural history of the British mammiferous animals; it is composed with unusual perspicuity, conciseness, and eloquence: it abounds with evidences of intense philosophical observation and research; it contains many instructive medical and physiological suggestions: and it is animated with an excellent moral spirit, which seizes every opportunity, by reproof or sarcasm, to discourage the extravagances of those frivolous or profligate amusements, wherein a savage pleasure is elicited from the infliction of pain. We would persuade the author to complete the course of his lectures; and afterwards, having withdrawn the unopaque veil of namelessness, to re-produce them in the form of a systematic natural history.

47. On Indigestion and Costiveness; with Hints to both Sexes on the important, safe, and efficacious Means of relieving Diseases of the Digestive Organs by Lavements, &c. By EDWARD JUKES, Surgeon. Octavo, pp. 196. Second Ed. Dec. 1831, with Plates.

48. Practical Examinations of the immediate Treatment of the principal Emergencies that occur in Surgery and Midwifery, systematically arranged. Intended to serve as an Exercise for the Student, and a brief Work of Reference for the General Praetitioner. By W. S. OKE, M.D. Octavo, pp. 250. Longman and Co. Dec. 1831.

49. Elements of practical Chemistry, comprising a systematic Series of Experiments, arranged so as to form an Introduction to the Practice of Chemistry, with Directions for performing them, and for the Preparation and Application of the most important Tests and Reagents. Ry DAVID BOSWELL REID, M.D. &c. Second Edition, pp. 555. Maclellan and Stewart, Edinburgh, Dec. 1831.

50. The Principles and Practice of Obstetric Medicine, &c. By Dr. DAVIS. Part II. price 2s. Dec. 1831.

51. Elements of General Pharmacy. By R. J. KANE, Professor of Chemistry to Apothecaries' Hall (Dublin), &c. Small 8vo. pp. 34, with several Plates. Dublin, Nov. 1831, price 8s. 6d.

This appears to be a very useful work.

52. Medical Case-book of Record for Students and General Practitioners, &c. By W. R. R. WILTON, Surgeon, &c. for 1831.

This is the record which we use in our own private practice.

53. An Essay on the Nature and Treatment of the Indian Pestilence, commonly called Cholera. By HENRY PENNECK, M.D. Octavo, sewed, pp. 40. Longman and Co. Dec. 1831.

We have not room in this number for the full titles of several works received late in the quarter—among others, Dr. Copland on Pestilential Cholera—Mr. Aldes on Iodine—Mr. Mac Notty on the Spleen—Dr. Hancock on Cholera—Dr. Norton on Diagnosis, &c. &c. &c. These will all be recorded fully in our next.

N. B. PART THE SECOND of Mr. Swan's magnificent work on the Nerves, (folio,) containing 18 plates, has been received, and will be fully noticed in our next number. It does infinite honour to the age and country in which we live.

Dr. P. considers the disease as a fever, sui generis, and having nothing to do with cholera.

54. Memoire et Observations sur le Cholera-Morbus regnant à Varsovie. Par le Docteur F. AUTOMARCHI, Médecin de l'Empereur Napoleon à Sainte Helena, Inspecteur General des Hôpitaux Militaires en Pologne, &c. Octavo, pp. 36. Bailliere, London, 1831.

This is a very interesting pamphlet, from one who has seen the disease on a large scale.

55. Atlas of Surgical Apparatus; being a Series of Delineations of the most important Mechanical Auxiliaries of Surgery, with descriptive Letter-press, explaining their several Uses and Modes of Application. By H.T. CHAPMAN, M.R.C.S. and late House-surgeon to St. Bartholomew's Hospital. Quarto, Plates, xx.; Figures, 200, lithographed. Highley, Dec. 1831.

These 200 figures, beautifully lithographed, represent the whole series of surgical auxiliaries in such a perspicuous manner, that the nature of the apparatus and the mode of its application are rendered evident to the meanest capacity. It is indispensable to the library of every man who undertakes the department of surgery, even on the smallest scale.

56. How is cholera propagated? The Question considered, and some Facts stated. By an AMERICAN PHYSICIAN. Millar, Henrietta-street, Covent-garden. Octavo, pp. 22. Dec. 1831.

Noticed in the Periscope.

57. An Antidote to the pernicious Doctrine of Non-contagion, &c. By HENRY REID, M.R.C.S. Octavo; pp. 22. Chelmsford, Dec. 1831.

EXTRA-LIMITES.

DR. HACKET TO DR. JOHNSON.

English Harbour, Antigua,
30th September, 1831.

SIR,

As there appears in your Review for May, 1830, "Observations on the Blood," by Dr. Stevens, and as you decline any comment on that Gentleman's doctrines till you hear further from him, I am, in the mean time, induced to trouble you, and offer some remarks on the subject in question, which I am rather inclined to think will cause some surprise in your mind, when the unqualified assumption, set up by Dr. Stevens, for the successful treatment of fever in the garrison of Trinidad, by following (as he says) the practice inculcated by him in his Observations on the Cure of Malignant, Yellow, or Endemic Fever of the Tropics, is considered.

I regret, at the very onset, to appear uncourteous, in charging this Gentleman both with misrepresentation and want of candour, in what he has published; and, under these circumstances, cannot, I confess, suppress my surprise at his temerity, in inducing that very respectable and learned body, the COLLEGE OF PHYSICIANS, to apparently sanction and give currency to his crude and visionary lucubrations, by the recital of his paper, officially it seems, amongst them. My object now is both to confute the misrepresentation of Dr. Stevens, and point out to you his very great want of candour; and, moreover, to prove that the sole merit, whatsoever it may have been, for the great success attending the treatment of fever in the garrison of Trinidad, belongs solely and exclusively to the military medical officers. I trust, ere I have done, to convince you that a borrowed garb has been assumed, which correct and proper feelings never should have allowed the Author of "Observations on the Blood" to have put on.

"Moveat cornicula risum

Furtivis nudata coloribus."

And if, from the nature of this affair, I may in any way appear an egotist, be pleased to set it down to the right cause, the ostensible situation I held, and not to any silly or unworthy vanity of my own. I have no wish to rob any man of the quantum of merit that is his due, but as I know of none due to Dr. Stevens which he so (let me say) unblushingly assumes for the treatment of fever in the garrison of Trinidad, it removes any delicacy on my part, in denying, in the most pointed and unqualified manner, his pointed assertions.

As to his Theory of the Blood, I wish to have nothing whatever to do with it here—considering it, independent of other reasons, one of those ephemeral "runnings riot" of the imagination, of late years greatly indulged in, by almost all the medical aspirants for fame; each wishing to locate or fasten fever, as it were, in some particular or peculiar organization of the human fabric, and each fancying he has caught it fast in that structure where it pleases him to presuppose that it rests or should rest.

As however I cannot admit the general correctness of the anatomical remarks on the blood contained in the publication of Dr. Stevens, and the whole data of his doctrine lying almost within the limits of his first page, I shall offer a few facts, drawn from dissection, that go to disprove the Doctor's Theory.

Permit me to inform you that every case that dies in our military hospitals must be opened and reported on; and therefore the opportunities of the military practitioner for examining the human body, and viewing the morbid changes in its structure, are perhaps greater than that of any private practitioner, however great or extensive his practice may be. On this account I may be entitled to some degree of credit for stating what I have actually seen, even though it materially differs from the statements made to the public. Be it remembered, my remarks are confined principally or altogether to Trinidad; the fever to be met with there, I may assume as the severer type of tropical fever; this place is even quoted by the Doctor, as being "generally considered one of the most sickly islands."

I shall now quote the passage referred to in support of the sanguineous fluid being the seat of fever.

" There is sometimes met with in the West Indies a malignant form of yellow fever in which, from the beginning to the end, it is evident from the symptoms that there is, during life, little or no affection of the solids, and often after death even the most able anatomists cannot detect any trace of disease, either in the brain, the stomach, the intestines, or any of those organs, whose derangement are generally supposed to be the cause of fever. In these fatal cases, there is no excitement in the commencement sufficient to injure the solids, and we can only ascertain the real cause of death when we open the heart, and examine the state of the once vital fluid; the cause of death then becomes evident, for we find there, in place of blood, a dissolved fluid, nearly as thin as water, almost as black as ink, and evidently so diseased, as to be totally incapable of either stimulating the heart or supporting life." " In both cavities of the heart the fluid is equally black, and in the whole vascular system, all distinction between arterial and venous blood is entirely lost."

In reply to this, my facts are these—that I never yet have seen a case of aggravated fever, (and I have seen, I may say, some thousands) in which, on dissection, one or other, most or all, of the following appearances were not present.

On removing the calvaria, the sinuses and blood-vessels appeared turgid with dark *viscid* blood—the substance of the brain itself was generally firm; often hard and turgid with blood; its medulla studded with innumerable red spots giving out its sanguineous fluid at each cut of the scalpel. There was often effusion in the ventricles; the plexus choroïdes generally injected, or, in fact, like a congeries of blood-vessels—effusion was also found, in basi crani, descending along the medulla oblongata to the medulla spinalis. It was no uncommon occurrence to find coagulable lymph between the dura and pia mater. The lungs were either sound, or exhibiting marks of previous disease; but gorged with thick, fluid, dark-coloured blood. The heart was natural, or large and flabby, with effusion in the pericardium, whilst the auricles and ventricles exhibited a thick dark-coloured *grumous fluid*. The stomach was generally distended with flatus; sometimes presenting a seeming contraction across from its great to its lesser curvature—its villous coat disorganized, in patches easily rubbed off by the handle of the scalpel—either deeply-tinged with a black matter, or containing in its cavity some ounces of a dark coffee-coloured fluid, totally dissimilar to the homogeneous yet grumous-like blood, the former being stringy and much more fluid in its nature, and not in any manner presenting the same material as exhibited by the latter fluid. The liver, in some instances, was preternaturally large or small; in colour, mottled grey, or a deep somewhat purple hue—the blood-vessels filled with a dark fluid—the cystic duct was found most frequently impervious, so that even a bristle could not find entrance; whilst the cyst was itself found greatly enlarged, filled with a tar-like matter in colour, and almost so in consistency—or perhaps it was occasionally found to contain a thin brownish watery fluid. The spleen was either preternaturally enlarged, crumbling under the fingers, or preternaturally small and hard. The coats of the smaller intestines partook more or less of the appearances of the stomach—whilst, what struck us most, was the very frequent contraction of the colon, which was most extraordinary throughout its whole course: not larger in calibre than the diameter of one's thumb. This, with the contraction of the cystic duct, most rivetted our attention; so that with the epigastric sensibility and careful examination of the abdominal parietes, we not unfrequently made a tolerable correct prognosis of what was occurring within. The pelvis of the kidney was sometimes involved. The ureters or bladder seldom, to my recollection, partook of disease.

The inference to be drawn from the foregoing is, according to my conception, that the solids and fluids are equally contaminated, under the effects of fever. Let it not be supposed that the contracted state of the colon, or impervious state of the cystic duct, were effects from long-continued disease alone—no such thing—for, I have seen these appearances indiscriminately, as well in those who have died in eight and forty hours from the attack, as in those who lived to the fifth or seventh day. It will be perceived (independent of the other great and striking differences) that the *watery thin black ink* blood spoken of so confidently by Dr. Stevens, was *never detected in our dissections*; but I nevertheless have seen, through the progress of the disease, the blood ooze from the gums, eyes, anus, &c. &c. as stated by him. It is also to be observed that the blood, after venesection in fever, seldom presented, in comparison to the frequency of the operation, a cupped or *buffy coat*. The coagulum had not tenacity, and was easily broken down by the finger: but, I repeat, on examination after death, the appearances the

blood presented, were invariably, and without one single solitary exception, dark coloured, *viscid* or *grumous*, as stated by me; though, in saying this, I would not be understood as denying the truth of the assertion altogether, as an occurrence never, under any circumstances, happening; for in the Principal Medical Officer's Office at Trinidad, the Dissection Reports of the York Rangers stationed there in 1816, gives the effects of what Dr. Jackson calls the *cachectic form of fever*, peculiar to that island. These cases all died *oedematous*, after a long protracted term of suffering, with pallid leucophlegmatic countenances, and with hearts, in several instances, enormously enlarged, and dark watery fluid blood in the veins. I mean to say, that what is stated even by Jackson, is not a common, or by any means a common, or even a very frequent occurrence, in tropical fever; and I am thus bound to impeach Dr. Stevens's candour, for stating in support of his hypothesis, what he has done—viz.—a marked—a peculiar characteristic—never as it would seem absent—always present—thus giving a worked up fancied picture, calculated only to mislead those who can have no opportunities themselves of witnessing fever in this climate.

I appeal to all my naval and military brethren—I appeal to yourself, who have ably written on the diseases of this climate, as well as to all the civil practitioners who have practised here, for the truth and correctness of my statement. I appeal to each and all, if they do not recognise in my description what they have more or less invariably noted themselves.

At No. 2, page 5, the learned gentleman seems to me to attempt to prove too much for his own credibility, by asserting that "the colour of the whole mass of blood, both in the arteries and veins, was changed from its natural scarlet or modena red, to a dark black."

In the *living artery*, I unhesitatingly deny this assertion; for, when, even in the latter stage of endemic fever, for some affection of the head, arteriotomy of the temples was resorted to, the blood invariably presented the bright scarlet hue, its peculiar characteristic. As to the blood in the dead arteries, this is the first time I ever heard it asserted that blood was contained in those vessels after death, in tropical fever. I am supported in the negative I now give to such being the case, by the opinion of numerous medical practitioners of different West India Islands with whom I have conversed on the subject.

Dr. Stevens's hypothesis seems to be little different from what Dr. Paris states in the historical introduction to his "Pharmacologia," under the head—"CHEMISTS," and "CLASSIFICATION OF REMEDIES." Dr. P. there pointedly shews, "the fatal errors into which such an hypothesis was liable to betray the practitioner," illustrated in the history of the memorable fever that raged at Leyden in the year 1699, and which consigned "two thirds of the population of that city to an untimely grave, an event which, in a great measure, depended upon Professor Sylvius de la Boe, who, having just embraced the chemical doctrines of Van Helmont, assigned the origin of the distemper to a prevailing acid! and declared that its cure could alone be effected by the copious administration of absorbent and testaceous medicines."

I shall not (as I have already stated) dwell here on Dr. Stevens' doctrines; but leave his refutation in the recorded opinions of the able writer of the Pharmacologia.

However common it is at the present day for every man to have a "flight of fancy" about fever or its seat, I nevertheless cannot forego giving an epitome or sketch of mine, however humble it may appear, acknowledging at the same time, that I profess to know but little of that disease, further than the phenomena it exhibits, and the mode which experience has taught me of encountering it. This also teaches me that the temperament or idiosyncracy of the individual attacked often greatly modifies both symptoms and degree, or perhaps I might even say occasionally the type of fever. For instance, in one will be found intermittent or pure remittent; in another, a very irregular intermittent; and in the next, perhaps, may be found typhoid characteristics mixed up with the remittent type. This also accounts to me for the anguish complained of in different parts of the solids, by different patients—thus the head and stomach (accompanied with great torpor of the intestinal tube) are generally the parts most affected in tropical fever, with distressing pains in the back, and calves of the leg. Yet these I have seen diversified in different patients—whilst, in some of the most fatal cases I have seen in the tropics, the stomach, from the onset, seemed the sole and only organ distressed—nay the only one complained of, the head being not affected at all—the integrity of the sensorial powers being preserved to the last.

Viewing fever, therefore, for my own part, as most generally, or rather always characterised by a suspension, or even cessation of all or part of the healthful or natural secretions, I am forcibly impelled to the contemplation of Philip's and Brodie's experiments on digestion and circulation; and to infer that the nervous influence (of the *par vagum, at the least*) is impeded; hence the human frame suffers more or less, in all or most of its component parts. I am convinced that to restore any of these secretions, no matter which, even let it be but the secretion from the pituitary membrane of the nose, leads to the most certain results. Let secretion be accomplished, and abatement of fever, I know, will invariably follow; whether its supposed seat be in the mucous, nervous, or any other favoured tissue, or in the blood itself. This is my brief and simple commentary on fever, and this view of it has led to most efficient and successful practice. But in our practice, we must be prompt and decisive; aiming to cut short the attack even in the first 24 or 48 hours, (for it is only within this period we can really count on our art)—this period once allowed to pass, without an impression being made, the disease becomes as it were a labyrinth, most difficult to unravel. The remedial means which experience has taught us to be most effective, are those which act on the secreting organs, for 'tis through these organs that the balance of the circulation is lost.

Experience—I might say sad experience—has proved this to me—the writings of the excellent and observant Jackson taught it to me, for his has been principally my text book: from him on this subject (with becoming gratitude I say it) I have learned much, and next to him perhaps I owe much to Mr. Tegart, for having, by his circular addressed to the medical officers in the command, when Inspector General here, drawn my attention to the great advantages to be derived from the administration of croton oil in tropical fever. I now candidly acknowledge the *great and satisfactory advantages* we derived from *his* suggestions and observations, and further that I availed myself of them *to a great extent*, and I *faithfully and conscientiously believe to the great preservation of human life*. I also feel indebted to a junior member of the department, Staff-Assistant Surgeon Cowen, for directing my attention to the administration of large doses of quinine in the intermission or remission of fever, which was attended with singularly happy results.

As Principal Medical Officer of Trinidad, for nearly five years, I know of no one to whom I am indebted for any professional hint, or to whom that garrison owes any thing for the great preservation of human life under pressure of disease.

I have now to state that Dr. Stevens visited Trinidad some time in 1828—when he also visited St. James's hospital there—our practice was then explained to him by Mr. Greatrex—for I did not see him,—this it seems elicited from that gentleman the remark “of the similarity of our practice to his own”—the only difference he observed between us (and I think Mr. Greatrex added, he remarked it was of little consequence, for we were in the habit already of using alkalies dissolved in toast-water for common beverage, as directed by Jackson) was the preparation of potasse *principally* used—we using the supertartrate (for we were in the habit of giving this remedy to a very large extent—half, and ounce doses) he the carbonate or subcarbonate of it, or soda, I forget which, remarking too, on the great advantages of using the lancet *in the warm bath*, and seeming, from what I understood, to make *that* the sheet anchor—and saying, since he adopted it (bleeding in the bath) he had lost no case of fever, whereas before, he lost many. This is laid down by Jackson, almost as a *sine qua non*, and was the routine of our hospital practice.

Mr. Greatrex also told me then of a theory of Dr. Stevens', “of an acid in the blood;” and mixing some blood and soda in a porringer, was inclined to think the appearance therefrom seemed to corroborate the idea. I laughed, and said “do you suppose that blood in the porringer possesses the same properties which it did, when within its proper vessels? Assuredly not—therefore how incorrect any inferences must be, drawn from such premises; for, whatever affinity these substances may have for each other, when thrown and thus mixed together in a cup; yet, I am stupid enough not to comprehend how the same thing can take place in the living fluid, enclosed in its proper tubes. Considering, too, the very minute quantum of soda, that can possibly pass from the stomach *direct and unchanged* into the *mass of circulation*, how small must be the means to produce such mighty effects.” I do not believe that the subject thus treated was ever again renewed between us.

“In August, 1828,” Dr. Stevens states, “at a time when there was a good deal of

sickness in the garrison of Trinidad, this practice (giving saline medicines) was adopted in the military hospitals of that island;" (mark!)—"that is to say, they bled freely, and used active purgatives in the commencement, to reduce the excitement, and afterwards the saline medicines were administered, until the fever abated, and during the convalescence the quinine was given in large doses." This was really our practice *both before and after the Doctor's visit*; but there appears to me an insinuation in the above quotation, or even probably more than an insinuation, implied in it, viz. that we were indebted to him for this mode of practice. This is not directly said, but I appeal to you if 'tis not left to be understood; yet Dr. Stevens had not the candour to give the whole of Mr. Greatrex's letter, which bears principally on the activity of the above practice, as inculcated by Jackson, aided chiefly by croton oil and quinine, and to which activity his letter attributes our success;—nor, by the bye, has he the common candour to state what he found our practice to have been; but gives a garbled extract, to suit his own purpose, from Mr. Greatrex's communication, not even stating, (which was remarked by Mr. Greatrex to him and worthy to be noted,) "that in those who died, though dosed with soda, the blood presented no difference as to hue or consistency, from that found on dissection in others."

'Tis painful to me thus to express myself; if I do an injustice, by my interpretation of Dr. Stevens's statement, I am truly sorry for it; and would call on him to correct it or set me right; but, I confess, in the light I now view it, never was daw bedecked in falser plumes than Dr. Stevens has arrayed himself; and, as proof of the accusation which I have made throughout this communication, both of misrepresentation and want of candour, I herewith send you a copy of Mr. Greatrex's letter to Dr. Stevens, on which that gentleman would seem to found the principal data of his hypothesis, and from which it appears that there is not one iota in it, that can fairly be said to be at all corroborative of his statement. So much for candour and professional integrity!

In pursuing this subject, 'tis but fair to say that a combination of mir. et carb. of soda, with nitre, was frequently and commonly given, as well as alkalinized toast-water and supertartrate of potass—the former was the wish of Mr. Greatrex, and the recommendation of Dr. Stevens, to which I had no objection; as I considered it tended to the fulfilment I sought—namely, renal, cuticular, or visceral secretion. These secondary means were, however, scarcely ever administered within the first 24 or 48 hours of almost any of the heavier or more dangerous descriptions of fever—latterly, certainly not, being merely considered adjuncts, and prescribed when febrile excitement had nearly or altogether subsided; but when some thirst or lurking febrile heat was still perceptible to the touch. Under these circumstances, the medicines were given to keep up the already aroused secretions. But, as to considering them specifics, or possessing annihilating febrile powers, or extraordinary virtues *per se*—the power, for instance, to unlock the cystic duct, most frequently impervious, or to relax to its natural dimensions the contracted colon, or even to change the consistence or colour of the blood, in those whom I shall term "*soda-fied*," was about as ridiculous as the experiment of mixing up blood and soda in a porringer. Culpable indeed, it strikes me, must that practitioner be, who, in West India fever, would place his reliance on such *trumpery*—on means so inadequate to the proposed end!

Although Mr. Greatrex gives, in his letter, a general view of our practice, as established at Saint James's Hospital, I shall, nevertheless, here exhibit a condensed sketch of it also;—and, as Dr. Stevens says, "they bled freely and used active purgatives," let us inquire to which of the remedial means we were indebted for success? In the following will be recognised Jacksonian practice; viz. an emetic of zinc sulph. on admission—bleeding in the hot-bath, most frequently ad deliquium, though not invariably—on coming out, friction and dry rubbing—after the operation of the emetic, compound jalap powder—soon afterwards enemata, composed of salts and castor oil, were thrown up to the extent of *three or four, or even I have known five large syringes full*; or, as much as the torpid intestines would hold, and as quickly in succession as they could be administered—all this was accomplished in a few hours. Towards evening, if there was no abatement of fever, the shower-bath—then followed bleeding again. As night came on, there was often great restlessness, with distressing pains of head, back, and calves of the legs, (very common symptoms, and indicating, I imagine, that the solids were somewhat implicated)—great irritability of stomach, or incessant vomiting. In such cases, croton oil was invariably given, to the extent of three or even four drops. I have known this repeated thrice through the night, and it is very worthy of

remark, that, the more irritable the stomach, [though, *prima facie*, to those unacquainted with the great febrifuge virtues and extraordinary powers of croton oil, in restoring the proper peristaltic motion of the intestines, which seems, in this disease, to be altogether inverted, this irritability, the very leading feature and peculiarity of tropical fever, would be a cogent reason for not administering the oil,] the more invariably was the croton oil found to be beneficial—so much so, that, in the morning, we generally found our patient, thus treated, either enjoying a perfect, or nearly perfect remission. Twelve grains of sulphate of quinine were then given, in a little syrup, or in solution with sulphuric acid; or if, from appearances, we were not satisfied of the permanency of the remission, a drop, or perhaps two, of the oil of croton were given with the quinine in syrup; or four or five drops in an enema;—whilst the body was sponged with either cold or warm vinegar and water, as circumstances seemed to demand. After such active treatment, we might as well consider the application of a blister—the lavements of cold water, often used in our practice in the course of fever—the erect position in bed, with cold cloths to the shaven head—or cupping the nape of the neck or epigastrum—or any other of our subordinate measures:—as well, I say, might we suppose *any single one* of these various means to be *the sole* cause of the cure, as that a little soda produced all the advantages which we obtained—and this too from the wonderful discovery of Dr. Stevens!! There is something—I hardly know how to characterise it—throughout all this affair, which I should term—at all events consider—not very unlike a PROFESSIONAL PETTY LARCENY, and which—

“ By Heaven I'd rather coin my heart,
And drop my blood for drachmas,”

than be guilty of!

In corroboration of what, throughout this paper, I have advanced, as to remedial means, I shall add, that I was directed by the Inspector General, Dr. Baxter, to proceed from Barbadoes to Tobago, in October last, in consequence of fever of a fatal character having broken out in the garrison there, and the following extract is from my official communication to him on the subject, dated Tobago, October 23d, 1830.

“ As to the character of the fever, it appears to me to be the aggravated congestive form; and nothing different from what I have been accustomed to see for the last five years, at Trinidad. These cases do not bear, at certain periods, the *free* use of the lancet; and though it is requisite, yet, as laid down by Jackson, it requires particular caution in its application.”

“ I am glad to say that the practice followed at Trinidad has been, (if from so few a number a fair criterion can be established) successful here also. May I remind you that bleeding, according to circumstances, in the hot-bath; filling the torpid intestines with purgative lavements—croton oil to the extent of four drops; given also in enemata, and seizing the first remission to administer a ten grain dose of quinine, the shower bath, &c. in the progress of the disease, were the general characteristics of our practice.”

If I have been betrayed to dwell longer on the foregoing subject than may perhaps be thought necessary, let it be remembered that it is difficult, on some subjects, to abstain from being diffuse or egotistical, particularly when “one's hard and honest earnings,” are publicly claimed by the undeserving;—and, in passing judgment on what I have stated, let there be carried to account, the *never ceasing toil and anxiety* devolving on the medical officers, both day and night, in attendance on, and watching by, the bedside of the sick, in tropical fever, under a severe and heavy invasion of it in a garrison. Opposed to all these, let a verdict (if the profession think fit) for the successful issue of the treatment, be triumphantly recorded by a *mere casual visiter*, viz:—“SODA” versus ALL OTHER MOST PROMPT AND VIGOROUS MEANS, pursued by those in charge of the sick—and at the very couch too of suffering; nay, I may even say, themselves in the very “battle's front” of disease! Such circumstances impartially considered, will perhaps prove some little palliation, for whatever may, at first view, appear objectionable, either in the manner or matter of this communication.

I am Sir, with great respect,

W. HACKET, M. D., Surgeon to the Forces.

English Harbour, Antigua, }
30th September, 1831. }

To Dr. JAMES JOHNSON.

("Extract") Mr. Greatrex's Letter alluded to in the foregoing.

Copy.

SAINT JAMES'S, TRINIDAD, 12th May, 1829.

Sir,

* * * * *

"I have reflected on the statement you made to me of your theory of West India fever—made experiments with the alkalies—and administered the mixture, composed of muriate of soda, nitrate of potass, and water, in the proportions and at the times you pointed out; but with what particular effect, I regret to say, I cannot determine for you, in consequence of its being mixed with the effects of several other measures which we are in the habit of adopting. I have been desirous to make out the precise uncombined consequences on the living blood of your soda mixture; but I will give you facts. During the month following your visit to us, we admitted to hospital 40 or 50 cases of the remittent or climate fever, of which three died; and, I administered the soda mixture myself to *a given number* in order to be sure that it had been taken. It was of *that number* that the three died. One of them was admitted within the first 18 hours, another on the second day, and the third on the third day. After death, the blood was in a state of *solution*. Examination was performed 12 hours after decease; the blood had not been alkalinized by the soda; it was dark-coloured. The morbid evidences were *precisely similar to those showed you in the Dissection Reports*. These men had been in the habit of drinking immoderately of rum, and undergoing unusual fatigue; exposed directly to the solar heat. By the action of the alkalies on the blood *abstracted* from cases of remittent fever, it is plain enough there is much acid in it. On that of patients of the climate fever the same observation occurs, and on that of the *healthy man* here, (at least so to all appearances,) a similar effect results; but less in degree from the alkalies. I have not, as yet, tried the alkalies on the blood of animals in this locality so productive of malaria, which I presume is to be considered the cause of the altered condition of the blood. The remittent fever blood is darker coloured and thinner than the blood of fever-cases in England. As you remarked, it seems too liquid, as if dissolved. It never presents a firm crassamentum, nor any of the buffed or cupped appearances, so commonly exhibited by fever blood in England. The same circumstances obtain in the blood of the climate fever, (as you very appropriately designated the yellow fever,) also in the colour and consistence of the uncomplaining man's blood, generally speaking; but sometimes more florid; yet still being thinner than what healthy blood is in England. I have taken the latter as the healthy standard. *A similar change from purple to scarlet, as by the admixture of the alkalies, is occasioned in the blood, by immersion of the patient in the hot-bath, as seen by bleeding during, or immediately after, his removal from the bath.* Do you think that this might be explained by saying the acid and aqueous parts of the blood have been driven off as perspiration by the hot-bath? I purpose trying the effects of the alkalies when I return to England, which may perhaps assist in coming to a conclusion.

The way we combat fever, is agreeably to Dr. Jackson's system, so admirably set forth in his invaluable book, viz.—We place the patient in a hot-bath at 110 degrees, and when well heated, and he perspires, open a vein, and take away from 36 to 60 ounces of blood—lift the patient on the bed, and have him well rubbed all over for 10 or 15 minutes—the head is placed tolerably high; in most cases a sound sleep supervenes, which continues from one to five or six hours, during which the cutaneous exhalations continue. On waking, fresh linen is put upon him and on the bed; an enema of sulphate of soda and castor oil with water is now administered, to the extent of two gallons, more or less according to the degree of peristaltic action of the intestines which may be induced. After the evacuation of scybalous and blackish compounds, your soda mixture is given every fourth hour. From the time of his waking, *now*, or in a few hours, we administer the croton oil, agreeably to the directions published by Mr. Tegart, in the London Medical and Physical Journal for August, 1825; and the effects of this oil, as they have appeared in some hundreds of cases which have come under my observation in Trinidad, fully support the high merits which Inspector Tegart has assigned to it. The night is passed sometimes with, sometimes without sleep; the air in the wards of the hospital is never suffered to become close or offensive. Your mixture is continued through the night—the next morning, at 6 o'clock, in 99 cases out of a hundred, even including what is termed climate-fever, there is a remission of symptoms,

more or less decided, when we give from 12 to 18 grains of sulphate of quinine in one dose, instead of three or four grains every fourth hour. Never any unpleasant effects in the sensorium (as many authors have said) have followed the administration of the sulphate of quinine, in our hospital. The alkalized toast-water, ad libitum, which Jackson advises, is used as a common drink, as is also the supertartrate of potass dissolved in water. As the temperature of the day rises, the symptoms seem inclined to recur, when we put the patient under a shower-bath, two or three shocks—then place him in a current of air, and apply cold-wash to his head. The effect is decisive. On the third morning of his being in hospital there is almost an intermission of symptoms, when we merely repeat the dose of the sulphate of quinine. If any vomiting recur, we give another dose of croton oil, and if any local pain or headache remain, we apply from eight to ten cupping glasses, and abstract from 20 to 30 ounces of blood—then, if necessary, apply a blister, but the cupping is generally sufficient. We were led to give the large dose of the sulphate quinine by a medical officer touching here, and telling us that it was given in that quantity on the Coast of Africa, with the best effects, and such have been the effects here; two doses are all that are necessary. On the fourth day of the patient's being in hospital, convalescence is established, when we give an ounce or two of porter frequently, in conjunction with light soup, an occasional shower bath—and keep the alimentary canal free. Under Divine permission, the above system has been applied to 340 cases, or thereabouts, including both the remittent and yellow fevers, admitted to hospital, after the fever had existed variously from 6 to 72 hours, antecedently to an application at the hospital, with such success, that, during the last seven months, not a case has died. Men have died in that period, having the remittent fever; but, at the same time, having abscesses in the lungs, and purulent expectorations.

I have the honor to be, dear Sir,

Your most obedient humble servant.

(Signed) E. GREATREX.

WILLIAM STEVENS, Esq. Surgeon, St. Thomas's.

The following extract of a letter from Mr. Greatrex (after perusing a communication of mine on the foregoing subject, and essentially the same) I beg to append—'tis necessary, in explanation of certain passages, to state, that Dr. Stevens wrote to a military friend belonging to the garrison of Trinidad, though *not a professional man*, to procure from Mr. Greatrex answers to certain queries which he put to him.

("Extract.") NAVAN BARRACKS, Ireland, 24th July, 1831.

* * * * *

"I have carefully read Dr. Hacket's letter, and have to observe that it is correct in all its parts; and that I concur in the view he has taken of Dr. Stevens's conduct.

I enclose, for your perusal, my letter and note to Dr. Stevens, as taken from a copy of the originals, and forwarded to me at Barbados, early last year, by my request, in consequence of the queries from Dr. Stevens alluded to in Dr. Hacket's letter.

I withheld, as you have seen by Dr. Hacket's letter, all authority for the publication of a part of my letter—*still Dr. Stevens published a garbled extract from it.*

I have not the queries, but if possessed, they would be unnecessary, as you have perceived their purport from my remarks upon them in reply to Dr. Hacket.

The first and second queries were clearly meant to produce, that which might have appeared to those who are unacquainted with the healthy and sickly periods in the West Indies, the belief (intended to be produced by Dr. Stevens) that we must have adopted his system of practice in Saint James's hospital; because the corps became healthy shortly after his visit. I have often thought (at least it is charitable to think so) that it was probably this want of observance of the effects of the seasons upon the British soldier, which caused the correspondent of Dr. Stevens to fall into the mistake, in writing what he was not in any degree warranted in doing, by the state of the case."

(Signed) "E. GREATREX,"
Assistant Surgeon, 12th Lancers.

II.
CHOLERA MORBUS.

To Sir HENRY HALFORD, Bart. M.D., President of the Board of Health, &c.

Sir HENRY,

When the disease misnamed Cholera Morbus was confined within our East Indian dominions, it concerned us only as a remote evil—but now that it has traversed Asia, invaded Europe, and advanced to the shores of the Northern Ocean, we awake from our dream of security.

“Tua res agitur proximus cum paries ardet.”

The Government has adopted measures suited to the emergency. A Board of Health has been instituted, and Medical Commissioners have been sent to Russia. In August last, the Board published “Papers on Cholera,” among which are letters from Drs. Russell and Barry, dated St. Petersburgh, July 27, 1831; in which it is unquestionably shown that the Russian plague does not differ materially from the Indian; at the same time it must be admitted that their identity is not satisfactorily made out. They have diagnostic marks as specific, at least, as those of Variola and Varicella, vulgarly recognised by the appellations of Small Pox and Chicken Pox, which diseases, though they have molested the inhabitants of this world for centuries, are still confounded by the Members of Boards and Professors of Pathology.

There is one thing clearly proved, that both assume the most alarming aspect at a certain period, when, if the most vigorous and skilful exertions be not made, both will speedily terminate in death. It is to be regretted that we cannot reconcile the fatality with our notions of skill; nor have we as yet any reason to entertain high expectations from the labours of the Commissioners, even subjected to the sagacity of the Board. We must have something more intelligible to guide us than the directions lately promulgated, otherwise, in the event of a visitation, we should have less to apprehend from the disease than from the treatment.

To suppose that this disease will visit the British islands is not unreasonable; the present epidemic reminds us of one which took a course not dissimilar in the reign of Edward III., anno 1349.

“A destructive pestilence,” says Hume, “invaded England, as well as the rest of Europe; and is computed to have swept away near a third of the inhabitants in every country which it attacked. It was probably more fatal in great cities than in the country; and above fifty thousand souls are said to have perished by it in London alone. This malady first discovered itself in the north of Asia, was spread over all that country, made its progress from one end of Europe to the other, and sensibly depopulated every state through which it passed.”

Extraordinary distempers also occur, seemingly confined to the country in which they originate, of which we have a signal example in the reign of Henry VII., anno 1485.

“There raged,” says the same historian, “at that time in London, and other parts of the kingdom, a species of malady unknown to any other age or nation, the sweating sickness, which occasioned the sudden death of great multitudes, though it seemed not to be propagated by any contagious infection, but arose from the general disposition of the air and of the human body. In less than twenty-four hours the patient commonly died or recovered; but when the pestilence had exerted its fury for a few weeks, it was observed, either from alterations in the air, or from a more proper regimen which had been discovered, to be considerably abated.”

The latter malady is ascribed to the state of the air, and the disposition of the body conjointly, and to the former the same causes may be with equal cogency transferred. Whether, therefore, the cases said to have recently appeared in Sunderland, Newcastle, and London, are, or are not, of the Asiatic description, unless you chain the air, or command the winds, you can oppose no obstacle to the march of the dreaded enemy; if the ensuing Spring should be moist and chill, with south-east winds predominating, a visitation may be apprehended, in contempt of all guards, quarantines, and *sanitary cordons*, the reliques of barbarism; but if a melioration could be effected in the constitution of the atmosphere, this would be at once a universal preventive and remedy. Taking a hint from antiquity, might we not have fires on our hills, and discharges of artillery throughout the land?

With regard to any specific cause of the Cholera, I think every problem relative

to it most easily solved, upon the supposition of a noxious temperament of the atmosphere ; with regard to its contagiousness, I refer to the able letters of Dr. James Johnson of London. I may just observe, *en passant*, that in this instance the doctrine of contagion, like the despotism of Turkey, seems to me to have for its supporters terror, prejudice, and ignorance ; let us proceed to matters of immediate interest, let us devote our minds to attain some fixed principle to regulate our proceedings, should this calamity, which heaven avert, render it necessary for us to exercise the duties of our profession.

Independently of the general advancement of pathology within the last twenty years, any one who can appreciate the knowledge acquired of the Indian Cholera itself, within a much shorter time, must be astonished at the apparently inert inductive faculties, and the consequent indecision of well informed and intelligent men, such as those are who compose the Board of Health.

It may require explanation, why I, who never was in India, should hazard an opinion respecting Indian Cholera ; on this point you will, I trust, find the following brief yet circumstantial narrative quite explicit and satisfactory. Above thirty years ago, I commenced a series of anatomical investigations concerning the changes which proceed in the centre of the nervous system during diseases, constitutional, general, and local. I am not aware that such an undertaking had ever been previously devised. Though my opportunities were few, I omitted none, and by the year 1808 I had collected a mass of facts illustrating affections distinguished by the epithet nervous, which I then communicated in my lectures ; by the year 1814, I had examined the brain and spinal marrow, and their nerves individually, from the olfactory to the last of the cauda equina, in relation to diseases of every class, including fevers, contagious and non-contagious, inflammatory and putrid, eruptive and non-eruptive ; partial statements of the results crept into periodical publications, and inaugural dissertations from the year 1810 to 1820. In this interval, some medical men of eminence began to see that a new avenue had been opened to the arcana of the animal economy ; since then, in every quarter of the globe, the spinal marrow has been attended to, and of late, what I many years taught to a few has obtained universal assent, viz. "that unless the brain, spinal marrow, and their nerves, be examined conjointly, and in connexion with the other organs of the human structure, all anatomical results will not only be incomplete, but must fail to throw any other than a delusive light upon the most common, numerous, and dangerous diseases."

In 1819, Dr. Robert Wight, an ingenious and ardent cultivator of medical science, went to India, and verified my suspicion, that Cholera was chiefly a spinal affection. He was, what probably no other man then in India was, expert in anatomising the spine, and well acquainted with the changes which the spinal chord exhibits ; were metaphorical language admissible, I would say that he burst the barriers, and exposed the strong hold of the Asiatic destroyer.

The first essays of Dr. Wight concerning Cholera are to be found in a folio volume printed at the Asylum Press, Madras, 1824, consisting of select cases and observations, and entitled, "Report of the Epidemic Cholera, as it has appeared in the territories subject to the Presidency of Fort St. George, drawn up by order of the Government, under the superintendence of the Medical Board, by William Scot, Surgeon and Secretary to the Board." The Doctor concludes this communication to the Medical Board as follows :—" These conclusions are not deduced from *a priori* reasoning, but from facts first ascertained and brought to light by the scalpel. They were first drawn by Dr. Sanders of Edinburgh, with the morbid parts before him ; they are of great practical importance, as they direct us to the very point on which to apply our remedies in these diseases ; they show us where local depletions can be most advantageously made in those states of the system where extensive general ones would certainly be fatal. They show us also how we can most effectually assist the operation of general with local remedies, by indicating the 'locality' of the disease ; and lastly, they show the states of the system, in which large general depletions can be used with safety and advantage, and where they are inadmissible."

The method of examining the contents of the cranium and spine, in connexion with those of the larger cavities, which, as already related, I was the first to follow in Europe, and Dr. Wight in Asia, is now, we learn, adopted in Russia. In the

"Papers on Cholera," we have the report of Dr. Keir on the Cholera of Moscow, which prevailed there in the Autumn of 1830 and Winter of 1831, in which he gives a very lucid and accurate detail of the *post mortem* appearances. We have also a document, the production of Drs. Russell and Barry, in which they detail the symptoms, from the beginning of what they call the first cold or collapse stage, to the end of what they call the second stage, that of re-action, heat, and fever; but their communication might have been of infinitely greater utility, had they inquired into the condition and feelings of the patients before the accession of the cold stage.

So graphic is the description given by Drs. Russell and Barry of the cold or collapse stage, that any man who had the requisite anatomical knowledge, on reading it, would instantly detect general paralysis blended with spasms, and ascribe it to the spinal chord, which was involved from its connexion or roots within the skull to its termination in the loins; and observing that, from the mouth to the toes, all the functions of motion, voluntary and involuntary, including those of secretion, were more or less suspended, arrested, and disturbed; that, in fine, that centre whence life emanates suffered almost as minutely as when labouring under severe concussion; he would determine without any great effort of reflection, that the treatment of each must be conducted on the same principles. It occurred, however, neither to the Russian Physicians, British Commissioners, nor to our Board of Health, that the very first thing to be attempted in the stage of collapse, was to relieve the centre of the nervous system, and thus restore the free communication of its influence to all the parts of the organization; which proves that, in their reasoning, they were not accustomed to combine the symptoms of disease, with *post-mortem* appearances. We may remark, that were the accurate observation of symptoms the only thing necessary to the knowledge of disease, the ancient empirics would have perfected nosology. But those, whom we have mentioned above, had an advantage which the ancients had not—they had the anatomical facts to illustrate the symptoms—they had two sides of the triangle, and could not find the third—they did not perceive the nature of the disease, and consequently could not conceive or divine what ought to be its remedies.

We shall next proceed to the Russian Cholera. In the report of Drs. Russell and Barry, there are assigned to it certain occasional preliminary symptoms, and others "which strongly mark the disease in its first cold or collapse stage, and a third set which characterise the second stage, that of re-action, heat, and fever." Of the preliminary symptoms, "Diarrhoea, at first feeble with slight cramps in the legs, nausea, pain or heat about the pit of the stomach, malaise, give the longest warning. Indeed, purging or ordinary diarrhoea, has been frequently known to continue for one, two, or more days, unaccompanied by any other remarkable symptom, until the patient is suddenly struck *blue*, and nearly lifeless. Often the symptoms just mentioned are arrested by timely judicious treatment." With the accession of the blueness, their first stage is completely formed, in which "the lips, the face, the neck, the hands, the feet, and soon the thighs, arms, and whole surface, assume a leaden, blue, purple, black, or deep brown tint, according to the complexion of the individual, varying in shade with the intensity of the attack." Further, they inform us that "the singular malady is only cognizable, with certainty, during its blue or cold period," and that, after re-action has been established, *it cannot be distinguished from an ordinary continued fever*, except by the shortness and fatality of its course."

The preliminary symptoms here given are common in fevers, merely constituting a part of the cold stage; and in having cold and hot stages, this disease differs not from fevers in general. Even in "the intensity" of their (Drs. Russell and Barry's) first stage there is nothing peculiar. That man is, indeed, but little conversant in the history of medicine, and has accumulated no great store of mental wealth from practice, who has not read of, and seen the same things on many occasions, and from various accidents, as well as in malignant fevers; and who did not observe, that when the central oppression was removed, the discolouration vanished, the re-action was mitigated or averted, and the patient saved. Nor is there any thing peculiar in the appearances discovered by dissection, since, in all fevers, except the hectic and symptomatic, the spinal marrow is similarly affected and deeply involved. To sum up, *the Indian or Russian Cholera is no other than an epidemic fever*; which, we may add, is very ill named, both because it is a fever, and because

the term Cholera signifies a superabundance of bile, though in this disease the bile is either deficient or wanting.

We now come to the point of vital importance, I mean the state of the patient sometime previous to the overwhelming assault. I am convinced, from ample experience, that such prostration of the vital powers never occurred unpreceded by a certain portentous state of the whole body, which was well sketched by Hippocrates, and elegantly portrayed by Celsus, though not connected with an antecedent and succeeding series. In their times brevity arose from necessity; their works, therefore, are not much more than note-books to instruct the instructed only. The signs of this state are concealed from the unwary, under the alluring mask of felicitous health; so that when there are unusual vigour, alacrity, and activity of mind and body; when the eyes sparkle with unwonted brilliancy, and the whole complexion is conspicuously improved; when every faculty and every function is exercised with a facility and a power that the person has seldom or never experienced, let him beware; he is on the brink of a precipice; and if an epidemic prevails, it has already seized him; his fall will be sudden and tremendous, in proportion to the exaltation which he enjoyed. This is the first stage of the *epidemic fever*, inadvertently called the *Cholera*.

The stage just described precedes those of collapse and re-action, the first and second of Drs. Russell and Barry, and *if that were skilfully managed, these would seldom supervene*. Attention to it ought to be insisted on the more earnestly, that it deceives under the appearance of the best health; and for another reason still more urgent, that during this stage alone can we expect to preserve, along with life, every organ uninjured. Here all the functions, all the organs, are exerting in unison to an intensity that no constitution can long sustain. If, during this excitement, which is that of real inflammation, the fuel of ardent liquors be added, who does not see the inevitable consequence? This explains why the intemperate are the most certain victims; though it is not so much habitual imprudence, as indulgence at this critical juncture, which hastens and ensures the fatal catastrophe, otherwise exemption would have blessed the natives of Hindostan, the most sober and moderate people on the face of the earth. They are not, however, without their reward, since all of them, who escape the extreme danger, recover much more rapidly and completely than their European lords.

It may seem extraordinary, but it is not the less true, *that to the total neglect of this stage, or to the not being aware of its existence, is to be ascribed the appalling mortality throughout the Indian and Russian empires*.

Let it be remarked, that this, as well as the other stages, differs in different individuals; it sometimes assumes the unequivocal characters of inflammatory fever, with quick and strong pulse, and apoplectic torpor.

It is truly curious to observe how constrained the mind is by preconceived notions. Medical men were so fully persuaded of the *collapse* being the commencement of Cholera, that occasionally, when the inflammatory state obtruded itself upon their notice, they spurned at it; nor would they believe that it belonged to the disease, they rejected it also, because "these are precisely the cases which yield most certainly and readily to our remedial means." Of this lamentable infatuation, and of the unconscious sophistry by which they evaded the lessons of nature, the documents before me are replete with examples. Though this letter is already long, you will excuse another extract from the "Official Report of the Epidemic Cholera, as it appeared in the territories subject to the Presidency of Fort St. George."

"Of all the symptoms of cholera, none is so invariably present, none indeed so truly essential and diagnostic, as the immediate sinking of the circulation. It must nevertheless be admitted, that, where instant remedial measures have been successfully practised, this symptom may not have developed itself; and that there are even cases, where an excited vascular action has been observed to accompany the first movements of the system in cholera. Some intelligent practitioners have entertained doubts whether such cases belong indeed to this disease; and there seems reason to imagine that those inflammatory affections with spasm, known in this country, and alluded to in several reports, may, in some instances, have been mistaken for it. It is farther to be remembered that these are precisely the cases which yield most certainly and readily to our remedial means: and it consequently

follows, that a medical man can seldom have the opportunity of observing whether or not this form of cholera will degenerate into the low stage. There is, however, direct evidence in support of the fact, that they have so degenerated, and gone on to a fatal termination."

Thus chance, or rather Providence, presented them with a gift, the proper use of which would have stripped this disease of all its terrors; but to foster a bauble, a paltry conceit, they threw away a pearl of inestimable value.

To conclude, Sir Henry, in this letter I make no sacrifice to complaisance; for, divested of personality or animosity, it is a rule with me, where the fate of my fellow-creatures is involved, to commend and to condemn with equal freedom. My design was to give a more practical application, than has yet been done, to the pathology of the Indian Cholera, to shew, that the succession of its symptoms is more extensive than it is generally understood to be: *above all, to point out the signs of its commencement, which, when known, will enable us to act so as to render this frightful pestilence comparatively harmless.* I therefore request you to submit these observations, hastily drawn up, though not hastily imagined, to the consideration of the Board, and entreat them to re-investigate, and scrupulously, all the facts and circumstances relative to the Cholera, that they may arrive at a definite judgment concerning its nature, and fixed principles to govern its treatment; which, banishing the dread of empiricism, will inspire the nation with confidence; and though the inhabitants of the United Kingdom may never require the aid of their labours, yet the countless millions in Asia, where this malady always exists sporadically, and so often rages epidemically, will owe them an inextinguishable debt of gratitude. Happy if I should be of any service in such an undertaking!

I have the honour to be,

Yours obediently,

JAMES SANDERS.

Edinburgh, 15, Duke-street,
November, 1831.

III. CHOLERA MORBUS.

Dr. BROWN, of Sunderland, to Dr. JAMES JOHNSON, and Dr. ALEXANDER TWEEDIE, Physician to the London Fever Hospital.

Sunderland, Nov. 10th, 1831.

GENTLEMEN—The first question asked here, and which probably may be put in London, is, "Is this the Continental disease?" The question is an ambiguous one, and ought not to receive a direct answer; for it may mean any one of these three things, viz:—1st. Do its symptoms correspond with those of the Continental disease? 2d. Has it been imported from the Continent? 3d. Does it, in its diffusion, obey the same laws as the Continental disease? In the first sense of the question, I would answer it in the affirmative; in the second, *decidedly in the negative*; whilst, in the third, my answer would be doubtful, for the laws which the Continental disease obey, in its diffusion, are not as yet fully ascertained.

Need I examine formally the question of its importation, and refute the story circulated through the newspapers of certain ships which lay above our bridge, and communicated the disease to the town? Those ships came from places where cholera did not exist at the time of their departure—most of them from Holland, where it has not yet appeared—their crews were, and had been, in perfect health; and the disease *first* manifested itself in a part of the town *two miles distant from where they were lying*. If there have been other modes in which disease may have been communicated from the Continent, I know not of them. One man, a pilot, was attacked some time ago; he had been on board a vessel, which had recently come in ballast from performing quarantine; but at the same time, cases identical in character were taking place in individuals, who had had no communication with shipping; and assuredly a ship with a healthy crew, in ballast, and which had performed the regulated quarantine, was not a probable source of the disease with which this man was attacked, and under which he succumbed.

The importation doctrine is here—where we must be supposed to be the most competent judges of a matter not of opinion but of fact—so generally abandoned, that I shall bestow no more pains on its refutation; but proceed to give as concise

a sketch as I am able, of what we may designate by the antiquated term, the medical constitution of the latter part of the present year, and endeavour to show by what insensible gradations our autumnal disease has passed into the intense form which has produced such lamentable consternation throughout the empire.

Early in the month of *August*, Cholera appeared and speedily became very prevalent. It ranged in all degrees of intensity, from slight bilious attacks, to cases attended with violent spasm, coldness, collapse, almost, (if not complete) arrest of the circulation, *white discharges, suppression of urine, and, in short, all the symptoms ascribed by observers to the Asiatic and Continental diseases.* Of these more intense cases, several were fatal, some of them within twelve hours; whilst others narrowly escaped by prompt and skilful medical assistance. Such cases occurred in situations remote from each other; some of them several miles inland—one, for instance, and that a fatal one, in a female living in the village of Boldon, five miles in the interior, and remote from the river. Others of the agricultural population suffered in various situations; some certainly near the river, but there were no ships in it at the time, which had come from suspected places.

On the abatement of the heat, Cholera became less general; but did not totally cease, cases continuing to recur at intervals, some fatal, others of great intensity, but terminating favourably; whilst the prevailing gastric and intestinal constitution was marked by the frequent occurrence of cases of fever, commencing with vomiting and purging of matters variously coloured—in short, by symptoms of cholera; and this state of things continued till the almost simultaneous occurrence of four deaths from Cholera, on the 31st ult. and 1st inst., excited general alarm. For what has subsequently occurred, the reports to the Board of Health must be referred to.

Whilst matters are thus proceeding in Sunderland and its immediate vicinity, information I have received from various quarters, and through various channels, leaves no doubt on my mind, that a similar train of events has been in progress generally throughout the north-eastern division of the kingdom—the same prevalence of fever, of which the initiatory stage is marked by vomiting and purging—the same occurrence of fatal cases of Cholera, since the season of heat and fruit has passed; but, so far as I know, the same prevalence of the intense forms of the disease has not been manifested elsewhere as here; yet this difference in degree does not, I imagine, make our state *essentially* different. What is our fate to-day may be that of others to-morrow. A fortnight ago we were no worse than our neighbours.

In this Sketch of the general progress of disease, during the Autumn, I have classed together things which, because differing in name, are by many supposed to be *essentially* different—cholera and fever. The relation between these two genera of disease, is as close as possible. If a man is attacked with vomiting, purging, and collapse, and succumbs to these symptoms, he is said to die of cholera; if the disorder of the system is eliminated, as it were, by the discharges from the intestinal canal, he is said to recover from it; but if neither of these events occur, his state becomes one of fever, not distinguishable from that affection unpreceded by choleric symptoms. The first case which Dr. Daun saw, on his arrival here, he said he could not distinguish from typhus—the discharges had ceased, and it had passed into the febrile state. I pointed out this relation between ordinary cholera and fever in the Essays published three years ago, and was not a little surprised to see my observation quoted in the *Courier* newspaper of the 7th inst. Am I then to regard the disorder I now witness here, as something not resulting from indigenous causes—as in no way connected with the progression of disease I have remarked—but as suddenly thrown in and totally foreign from that to which, notwithstanding, it bears so striking a resemblance? I own I cannot so far shut my eyes to facts, or fail to exert my reason in drawing legitimate inferences from them. If I now visit the houses of the opulent and comfortable, I find, as heretofore, bilious attacks easily allayed, or febrile disorder connected with them;—in the hovels of the indigent, I find a disease characterised by the symptoms of the epidemic cholera of the Continent, so far as I can judge of them by the reports of others. The rational inference from this appears to be, that both result from the same epidemic influence modified in its operation by the different circumstances in which the two classes of persons are placed.

In thus stating my belief, that this disease is but the effect of a general epidemic influence, I wish it to be distinctly understood, that I have seen nothing in its progress that has led me to conclude that contagion is instrumental in its diffusion. One or two *prima facie* cases of infection have presented themselves; but a little scrutiny has shown me their fallacy. This branch of my subject, if it appear necessary, I will resume at a future opportunity.

It must be evident from the opinion just expressed, and the general tenor of my communication, that I should deem all restrictive measures on internal commerce as useless in a preventive point of view, as they have already proved on the Continent, whilst, on many grounds, their impolicy is obvious.

I remain, my dear Sirs,

Your very obedient servant,

J. BROWN, M.D.

IV.

TORTI ON PERNICIOUS FEVERS.

DR. NEGRI, a very intelligent and erudite Italian physician, residing in London, has published two letters in the Medical Gazette, in which he has shown the great resemblance, if not identity, between the malignant cholera and the pernicious fevers described by Torti, more than 120 years ago.

“Speaking of the character of those fevers, Torti says, ‘the pernicious intermit-
tent, more especially that wearing the tertian form, kills about the beginning of the
paroxysm, when it is accompanied with violent bilious vomiting and purging of bi-
lious humours, equally vicious both in quality and quantity, being sometimes clear,
at others coloured, and occasionally of inspissated greenish bile; to which vomiting
and purging are added, hiccup, a hoarse sonorous voice, hollowness of the eyes,
pain of stomach, small sweat upon the forehead, weak pulse, and cold or livid ex-
tremities—in one word, all the symptoms which usually mark *cholera morbus*; from
which, however, this, as it were, *choleric affection*, is to be distinguished, since it is
a mere symptom of the fever, the period of which it follows, *as a shadow does a body.*’”

Torti describes a “*febris perniciosa cholericu*,” in which the patient becomes nearly exhausted, “universally chilled, lies supine, with a pulse almost abolished, sunken eyes, and difficult breathing.” Dr. Negri also quotes from Mercatus, physician to the King of Spain, who describes a pernicious tertian, presenting the same symptoms as cholera, and frequently lapsing into a pernicious fever. The following passage from Morton, quoted by Dr. Negri, will be read with interest at the present moment.

“Among the innumerable symptoms attending these fevers, there is none which may not rise to a great height, endangering the life of the patient, so that *typhus fever* (masked in its stages of cold, heat, and sweating) supervenes, rendering it im-
possible to be distinguished by the *urine, temperature, pulse*, or indeed any other means; but, concealed under the appearance of cold, vomiting, diarrhoea, *cholera morbus*, colic, or other disease, not unfrequently misleading the physician.”

Torti, as well as Morton, exhibited bark as early as possible, and in large quantities, and this practice is recommended by Dr. Negri, from experience of its good effects in the malarious fevers of Italy. Dr. Negri comes to the conclusion “that the malignant cholera of our days belongs to the same class of diseases which was seen by Mercatus in Spain, Torti in Italy, and Morton in England.” He suggests the administration of bark in large doses, and early in the disease.

The following case from Torti presents a complete picture of the Sunderland cholera.

“When I reached the patient, he had been several hours labouring under the disease. I found him universally cold as marble, with the pulse altogether, if I may so say, absent, breathing laboriously, and having a leaden-coloured countenance. There was some torpor, but no confusion of intellect (*he never mentioned delirium*) and his urine was secreted in a small quantity. I prescribed the bark in large doses. A gentle heat soon pervaded his entire frame; the pulse gradually returned; the respiration became natural; the face lost its leaden hue; the urine was secreted in its ordinary quantity, and in three days he was quite recovered.”

THE PRESENT EPIDEMIC.

The more we reflect on the subject under consideration, the more we are led to think that the cholera now in England is an epidemic *choleric fever*, which has shewn itself, in various modifications, throughout the whole of the Summer, Autumn, and up to the present time. An immense proportion of our population is insusceptible, or nearly so, of the poison—a smaller portion is susceptible of it in various grades of power, in the following ways, according to our observations. In the lowest grade, the epidemic poison merely creates some uneasiness in the line of the primæ viæ, more especially in the evening and during the night, when the chyme and faeces are passing along the intestines, but without any increase of the alvine evacuations. In the next grade; to the above uneasy sensations are added twitches of griping, and one or two additional evacuations daily, of a looser consistency than is habitual to the individual. In the third grade, there is a mild diarrhoea added to the uncomfortable sensations and occasional gripings, the motions being feculent, but thin and accompanied by much flatulence, and some discharge of intestinal mucus. In a fourth degree, the bowel-complaint assumes a severe form. The individual complains that his food runs through him—he loses appetite—gets thinner—and looks ill. In this degree, medical assistance is called in, whereas, in the preceding grades, the patients generally have recourse to domestic remedies. In a fifth grade, there is an approach to dysentery, and some pyrexia attends the complaint. The motions are mucous, watery, pale, or bilious, according to the idiosyncrasy of the individual. In a sixth grade, the disorder assumes the form of common autumnal cholera, there being vomiting as well as purging; the ejected matters being first the common contents of the primæ viæ—then watery and mucous—and lastly bilious. In the seventh or highest grade, we have, especially among the drunken and debauched, and in filthy, crowded, and malarious localities, the intense form of the epidemic, exhibiting the symptoms of the Sunderland and Newcastle disease—first the cold, blue and non-secreting stage—and then, if the patient survives this stage, a typhous fever.

We appeal to our practical brethren, throughout England, whether this is not a representation drawn from nature and facts, instead of closet meditations. The susceptibility to this intense grade of the reigning epidemic, is, taking the whole population of the country into calculation, limited to an extremely small portion of society. It is limited, generally speaking (for exceptions will be found to all rules) to those who are most susceptible to any reigning malady, from the state of their own constitutions and habits—and who live in places the most injurious to health. All the severe grades, however, might be conveniently and practically grouped under four forms of the epidemic malady, namely, 1st form, gastro-intestinal malaise—2d form, diarrhoea—3d form, common cholera—and 4th form, AS-PHYXIAL FEVER, or, as it is commonly called, ASIATIC CHOLERA. We conceive that the cause of these four modifications of the same disease, is to be sought in the predisposition of the individual, and the degree of intensity in the poison. In the crowded and filthy hovels of the poor and the dissolute, both predisposition and poison will be found in their intensest degrees; and there the malady will be rapid in its march, and fatal in its termination. In the middling and upper classes of society, the intensity of the poison can seldom or ever be great, and the severity of the epidemic will always be in proportion to the predisposition of the individual. On this account, the upper classes have the means of preservation very much in their own power.

Finally, after the most impartial deliberations of days, weeks, months, and years—we are unable to satisfy our minds, as to the mode of propagation. Looking to individuals, the disease appears to be incommunicable. Looking to the progress of the malady, from the banks of the Ganges to the banks of the Wear and the Tyne, the germs or cause of the disease appear to be carried along, in a Northwest direction; but whether by persons, by goods, or by some inscrutable state of earth or air, we are unable to imagine—or at least to decide. We would advise our brethren, therefore, to lay aside prepossessions and theories—to observe accurately—to weigh facts impartially—to be slow in drawing conclusions—and to exhibit less acrimony to each other, when they differ in opinion. By this philosophical conduct they will promote more effectually the cause of medical science, and expose themselves less to the censure or the ridicule of the non-professional world.

V.

EXTRACTS FROM MEDICAL REPORTS, FOUNDED ON ACTUAL OBSERVATION, AND COMMUNICATED TO THE GOVERNMENT, ON THE CHOLERA MORBUS WHICH PREVAILED AT DANZIG BETWEEN THE END OF MAY AND FIRST PART OF SEPTEMBER, 1831. By John Hamett, M.D., &c. &c. R.N. One of the late British Medical Commission at Danzig, &c., in the North of Europe.*

Circumstantial Report on the first Appearance and subsequent Spread of Cholera at Danzig.

It remains a problem to this day, in what manner the Cholera Morbus originated in and about Danzig : certainly it is not proved to have been brought hither from Russia or Poland by men or merchandise ; because no ship had arrived at Danzig from any Russian port previous to its appearance, and the intercourse with Poland had ceased since the beginning of the Winter. The first symptoms of cholera shewed themselves indeed in such a peculiar manner as almost to exclude even the suspicion of its importation ; and it is reasonable to conclude, that the disease originated here in some manner that has, as yet, not been explained.† This is corroborated by the statements of several physicians, viz., that cases similar to cholera had been observed previous to the arrival of any vessel from Russia ; and that the weather had been so remarkably unsettled since the commencement of Spring, that malignant diseases might be reasonably anticipated.

In accordance with this expectation, the clergy of the city received orders on the 11th of May to report twice a day to the town physician the names of those who died ; the physicians to announce every case of suspicious sickness or death ; the police officers in the different districts to have a watchful eye on every case of sickness, to procure correct information of the same, and to give daily, and, if necessary, instant notice of them ; while the magistrates were requested to render the police officers due assistance through the inspectors of the district, and the wardens of the poor ; and in general every thing had been prepared to obtain speedy information of all suspicious cases, and to make the necessary arrangements according to circumstances.

The two first acknowledged cases of epidemic cholera occurred on the 27th of May, in the Neufahrwasser, or harbour-canal, one German mile from Danzig, in two mud-barges used for keeping that canal deep ; the two next on the 28th, besides a suspicious case ; but it was not until the 29th that these cases, particularly the latter, were discovered ; and on the 30th, that the public authorities announced the existence of the epidemic accordingly.

On accurate inquiry, however, two or three cases of the malady appeared to have occurred in the town of Danzig on the 28th, in two quite different parts ; since which it has been ascertained that isolated cases, similar to cholera, were witnessed at an earlier period than the 27th.

The discovery of the first appearance of the epidemic on the 29th did not take place in the harbour-canal where it had broken out, but in three or four villages nor far from each other in the Danzig Nehrung, in the following manner :—

* After the last sheet of our Journal was worked off, we happened to see the following document in the hands of a friend, and having borrowed it, we take upon ourselves the responsibility and blame, if blame there be, to make it public, for the good of science and society at large.—ED.

† I have with great pains sought for its origin in the different physical states of the atmosphere for the last six years, in connexion with soil, localities, &c.

The physician of the Danzig district, Dr. Lenz, was informed, on the 29th of May, that, of four labourers who had fallen sick in the mud-barges in Neufahrwasser, and had been conveyed to their homes in the villages of Nickelswalde, Krohnenhoff, Einlage, and Schnackenburg, in the Danzig Nehrung, three had died suddenly from some suspicious sickness, and one was still alive. He found symptoms of Indian cholera in this patient, and judged the above three had died of cholera. He reported these cases the same evening to the Regency ; and in a conference which took place at ten o'clock the same night with the chief president, Rothé, it was resolved not only to isolate immediately the said villages, but also to investigate the particulars of the mud-barges. This investigation was accordingly made the next morning by some of the police, and the city physician, Dr. Mathy, when the following particulars were ascertained :—

The labourers in the two mud-barges had been in active employment since the 16th of May on the six working days of the week. The two barges had, under the direction of their respective overseers, Gutziel and Wolff, one thirty-six, the other thirty-four men ; all of whom, on the arrival of the Commissaries, on the 30th of May, at eight o'clock in the morning, had been hard at work since half past four ; and except the above-mentioned four, and one suspicious case, were all found in good health.

With respect to the labourers in the mud-barges, it will be proper to state, that by far the greater number of them are inhabitants of the Danzig Nehrung, belonging to the Danzig Landrath district ; and only few of them live in the suburbs of Neufahrwasser ; that the former go regularly every Monday morning to the mud-barges, in which they literally live, remain there during the week, and return on Saturday with their weekly wages to their families. Their food consists chiefly of potatoes, groats, bacon, and sometimes flour dumplings. Of these they take a sufficient quantity to last the week ; and are, therefore, seldom under the necessity of leaving the barges. As, therefore, they had seldom any communication with other people ; and as in the villages in the Nehrung, and in the suburbs of Neufahrwasser, as has been stated, no illness had occurred before these individuals fell ill, there was no evidence of contagion in these instances.

No other case of cholera occurred in the mud-barges, besides these ; the mud-barges, however, soon ceased to work after this.

In all the vessels lying in the harbour, no case of fatal sickness took place, until the 30th of May, neither among the numerous labourers employed in building the pier, nor in the other establishments at the harbour.

On board 110 ships from Russian ports, laden with provisions, &c. for the Russian armies in Poland, which arrived at Danzig between the 30th of May and 17th of August, Captain Brandt only, as it is presumed, died of cholera on the 31st of May ; in the Contumace Establishment at Bresen, only two seamen died of it ; at the unloading of the cargoes of these ships in the roads and harbour, and on the Vistula, no one died.

The first vessel from Russian ports was the *Monna*, Brandt master, direct from Riga. This vessel arrived in Danzig roads early in the morning of the 30th of May, three days after the first appearance of the epidemic, and was allowed to enter the harbour the same forenoon, having a clean bill of health from the Prussian Consul at Riga. Mr. Gibsone, the British Consul in Danzig, ascertained that he had not been well while on his passage, and that he died on the 31st of May, and not on the 1st of June, as stated in the General List. This is only a presumed case of cholera, he not having been visited by any physician in his last illness. His two sons and the mate of the *Monna* attended on him, and they, as well as the crew and pilot, escaped the disease.

That ships from Russian ports did not arrive at Danzig before the 30th of May is ascertained by the list of arrivals here, which lies open to every one's inspection ; at the same time it should be mentioned, that the earliest information of the cholera having appeared at Riga, was received on the first of June by Kits-

kats, the ship's broker, who had it from the Prussian Consul, General Woehrmann, at Riga, in a letter dated ¹⁴ May:

On the 30th of May cholera appeared not only in the town, but also in the suburb Schlapke belonging to Schidlitz: thus, at the same time in two quite different parts of Danzig. It attacked several individuals in Eimermacherhoff, Rambau, and Seigen, three streets adjacent to each other, not far from the principal ramparts of the fortress, and Mottlau guard-house, which is situated on the confluence of the Mottlau and Radaune streams, into which all the dirt and filth of the low and old town in particular are conveyed. The Mottlau, which is the larger stream, is lost in the Vistula at about 2000 paces from its place of junction with the Radaune. The above mentioned streets are in the lowest part of the city, and were in March, 1829, quite inundated, the water rising, in several houses, from five to six feet, and in some even to the ceilings on the first floor. The ground there is rather marshy, and intersected by drains for carrying off the dirt and filth. When the Vistula is higher than ordinary, parts of these streets are generally more or less inundated.*

The suburb Schidlitz, distant about a quarter of a German mile from the city, is in a dry and more healthy situation; the houses are more airy, and less contiguous than those of the above named streets, and the manner of subsistence and occupations of the inhabitants of a totally different nature: those of the above-mentioned part of the city gaining their livelihood chiefly by such occupations as relate to shipping, while those of the suburb of Schidlitz and Schlapke are chiefly agricultural or mercantile labourers, and subsist on the produce of their gardens. *Here only one woman fell sick at an early period, and subsequently but few cases appeared.*

It not only appeared, as above stated, in the old town, but continued to spread, without any marked order from personal contact or proximity, in low, damp, and dirty, or close situations, all over the city, among the destitute and poor; who are here, in general, ill-clothed, ill-fed, uncleanly in their persons and dwellings; never wearing flannel next the skin; subsisting chiefly on indigestible and unwholesome food, and in the habit of using pernicious drinks:—habitual drunkards of whatever class have been invariably the victims of this malady. Besides these, it occasionally selected for its objects, in comparatively healthy spots, persons of particular constitutions and habits, in easy circumstances of life, who happened to suffer in their health, in the various ordinary ways from exposure to cold damp air, especially at night; from profuse perspiration suddenly suppressed, the bad effects of conjoined wet and cold, &c. &c., and, above all from recent derangement of the stomach and bowels. The higher and middle classes escaped the disease; a few excepted, who brought it on by a want of common care of themselves, or who became incidentally predisposed to it, as shown in the Police Reports; and the interesting communications to me from Mr. Gibsone, the British Consul in Danzig; they not having been near, or at least ascertained to have been near, infected persons.

In proof of these statements, between the 28th of May and the 23d of July inclusive, 835 persons, consisting almost entirely of the wretched and unhealthy poor, were attacked with cholera, of whom only 195 recovered, according to the General List, making the amount of deaths during that period 640. During this period of eight weeks, notwithstanding that 2000 inhabitants of the dwellings of these sick were shut up for twenty-one days, subject to the bad effects of fear, want of exercise, and fresh air, though indeed having the essential advantage of being well fed, only 188 persons fell sick in 108 houses, in each of which,

* An inundation, unexampled in the memory of man, took place in this month : and year, and laid twenty German square miles of the immense plain, or valley of the Vistula, as it is called, under water.

at the same, or at different periods, there was more than one patient;* and in these 188 patients, a probable or predisposing cause to the disease has been officially reported in the Séparée General List.

In a population of between 70,000 and 72,000 in Danzig and its immediate district, the whole mortality from cholera was officially reported to have been 1028 of both sexes and all ages, coinciding in all particulars of the disease with the above-mentioned 640, between the 30th of May and 8th of September. The numbers actually taken ill of the disease I have been unable to ascertain. The physicians in Danzig, as I repeatedly stated in my reports home, did not report all affected with cholera.

As it is of importance to know the proportion of its victims of both sexes, and at the different decimal periods of life, I beg leave to state, that of these 1028, according to the official report alluded to, 539 were men, 368 women, 59 boys, and 62 girls. Of these, 26 males and 20 females died at different ages under six years.

Descriptions of the Symptoms of the three Principal Forms of the Epidemic at Danzig ; being Extracts from the circumstantial Detail of the Symptoms of it, including its subordinate Features.

PASSING over subordinate features of the epidemic, I shall limit my descriptions here to the three principal forms of it; viz.

1. The rapid and severe cases of fatal cholera.
 2. The protracted cases of fatal cholera ; and
 3. Those less severe, which proved favourable.
1. In most rapid and severe cases of fatal cholera, the patient was suddenly seized with sickness or pain at stomach, occasional pain, or feeling of weight and uneasiness in the hypochondria, the right hypochondrium especially; giddiness, prostration, great thirst and craving for cold drinks, a cold sweat that quickly became colliquative and clammy; at times coldness alone, at others coldness and dampishness of the body, but never with shivering; the pulse was frequent but not hard, and soon became exceedingly reduced; the hands and features somewhat shrunk: the tongue was foul, unnaturally moist, and occasionally tremulous; the voice subdued; the eyes heavy and suffused, and the sight dim. These primary symptoms were in general either accompanied, or immediately followed, by retching and vomiting, and a peculiar watery diarrhoea, which often, however, proved irregular in the order of attack, occasionally even with respect to each other, and oftentimes severe, in hot, close, and electrical weather especially; griping pains in the abdomen; painful contraction of the muscles at the umbilicus; suppression of the secretion of urine, and occasional pain in the region of the bladder. Cramps in general followed the retching and vomiting, and in most instances invaded the calves of the legs at first; in their attacks of other parts of the extremities, they proved irregular, seizing first the fore-arms, calves and fore-arms, hands and fingers, toes and feet, or hands, feet, and calves, in different instances indiscriminately; occasionally they mounted up the thighs, but seldom attacked the trunk. Men rarely escaped them, women frequently, and children generally.

* As in the low parts, particularly of the old town, of Edinburgh, so in the low and the old town of Danzig, the houses are composed of stories, or flats, in each of which one or more families reside. But, unlike the old town of Edinburgh, there is in general here a large privy in each house, which is seldom emptied until it is full, or nearly full. The sewers are, for the most part, made of wood, not close, and prove bad conductors of the dirty fluids thrown into them. Hence the offensive effluvia occasionally so common here at those changes of the weather when the mercury rises in the barometer.

The vomited matter in general consisted of undigested food at first, sometimes partially tinged with yellowish green; of fluid ingesta, also occasionally imbued with greenish coloured matter, and partly of slime and mucus. Often, however, it consisted of undigested food, or of fluid ingesta alone, without being in any wise so imbued. In the retching and vomiting which followed, the fluids taken continued to be rejected with a little greenish coloured matter, with or without more slime or mucus. The dejections were always watery; sometimes as if coloured with feculent matter; in general they were either colourless, somewhat like whey, or had the appearance of rice-water, barley-water, occasionally somewhat dirty, or with an avenaceous sediment, after being shaken in water.

After this first advance of the disease, the following symptoms rapidly supervened; viz. increasing oppression at the heart, and short hurried and laborious breathing, ending in complete oppression and weight at the *præcordia*; tossing of the head about; anxious restlessness depicted, often with terror, in the countenance, which in general was of a dark brown, wan, or leaden hue, according to the complexion; insatiable thirst, with incessant craving for cold drinks, and the voice raucous and depressed. The retching and vomiting, and diarrhoea, with occasional *tormina* and cramps, at first only intermitting at short intervals, subsided either abruptly, or gradually as vital exhaustion advanced; the pulse at the wrist, if not extinct—which it was in most rapid and severe instances—was accelerated to the utmost in frequency, and barely felt; the surface of the body quite cold, damp, and clammy, and the feet and insteps marked with bluish streaks and patches; the tongue cool or cold, and in some instances livid at the tip and edges; breath cool or cold; lips blue; nose sometimes bluish; voice below the breath, or gone; cheeks and eyes now quite sunk; pupils at times partly or completely dilated; eyelids half closed, and encircled with livid rings; the parts of the conjunctivæ exposed being much the same in appearance as after death. Amid this complicated suffering, the patient was not insensible until just before dissolution, which ensued after some faint convulsive sobs, generally within from eighteen to seventy-two, and occasionally within from eight to eighteen hours after the first attack.

2. In the protracted cases of fatal cholera, which have been few in number compared to the rapid cases, the following febrile symptoms have been observed, more or less, in different patients after the indefinite period of the first stage: namely, marked congestion, with pain in the head, deafness, humming noise in the ears, heavy stupor, continual drowsiness, partial ravings; a dark flushed, brownish yellow, squalid or cadaverous countenance; a dark brownish clammy, or furred tongue; dark sordes about the teeth and lips; eyes heavy and suffused, or dry and parched, often with eventual dilatation of one or both pupils; a hot or cold clammy skin; pulse frequent, with febrile action, or very small; with pain or soreness of the abdomen, increased on pressure—and occasional tenesmus. With these symptoms, the excretions, as may be readily conceived, were scanty and vitiated. The stools dark, dark-green,—very fetid, and the urine in general dark coloured. Delirium generally took place in these before death, and they died within from three or four to five or seven days, or later, after the first attack; more generally on the fifth.

These modifications of particular symptoms, bordering on each other, and referring to individual parts, depend, I need scarcely add, not only on differences in constitution, but, in a certain degree, on the mode of treatment at the commencement, and even on the state of the locality in which the patients happened to be placed.

3. In the cases less severe,—and as I have observed,—of less unhealthy persons, in whom the natural powers* of the constitution were calculated to with-

* This is certainly true; and yet a woman, named Eliza Brandt, thirty-six

stand the effects of the shock on the system, giddiness, retching and vomiting, watery diarrhoea, occasional gripping pains in the abdomen, cramps, occasional painful contraction of the muscles at the umbilicus, thirst, and suppression of the secretion of urine, took place, and proved occasionally severe; but the congestion in the head, and oppression in the chest were certainly less marked; the pulse, although barely felt, was rarely entirely suppressed; coldness of the body, the cold, clammy sweat, and other bad symptoms were not marked in any great degree. The leading symptoms gradually, or abruptly disappeared; and more or less of febrile re-action ensued, generally within from eighteen to twenty-four or thirty-six hours, or more, after the commencement of the disease, about which time hiccups, always a favourable sign, were occasionally noticed, and not before. The exact period of the return of the urine was not certain, being sometimes before, at others after the first appearance of re-action: it was dark or high coloured, voided in small quantities with occasional difficulty, and frequently attended with some pain in the region of the bladder. The return of urine, though an important symptom, was not always decisive of a favourable result; on the contrary, hiccup, which however was not always observed, almost invariably indicated recovery. The dejections immediately after the commencement of re-action were fluid, scanty, and dark-coloured, as if imbued with blackish feculent matter; but they very soon became successively brownish, and naturally bilious and feculent. Indeed, in the majority of cases of this description, the secretions and excretions soon got into play, and restoration was more or less rapid.

Partial stupor, with little or no delirium, more commonly occurred in children, and spare aged persons free from previous organic, or general complaint, and gave grounds for a favourable prognosis: they seemed tranquil, and as if naturally asleep. They were in general affected with œdema in the feet, and more or less in the legs after convalescence had commenced. œdema also occurred in others after the disease, but not generally. In pregnancy, abortion invariably took place, and was always a critical symptom, death or a favourable change soon following.

From the description above given of the rapid and severe cases of fatal cholera in Danzig, its similarity to the Indian cholera appears manifest; and from the descriptions of fevers supervening after the first stage, as given in the second and third forms, its deviation from the Indian epidemic, in which those fevers do not generally supervene, also appears evident. The greater severity in general, which has been found of the vomiting, diarrhoea, gripping pains in the bowels, and painful contraction of the muscles at the umbilicus, in the epidemic in India, compared to that in Danzig, is easily explained by the well-known influence of the climate in India on the whole system, and digestive canal in particular.

JOHN HAMETT, M.D.

Extracts from the Pathological Report on fatal Cholera, both rapid and protracted, founded on the Examination of twenty-one Subjects; the youngest of which was four, and the oldest ninety years of Age, the rest having been of adult and middle Ages.

MANY of the characteristic appearances after death will depend, in a great measure, upon the number of hours elapsed before the body is opened; the later the examination, the less truly characteristic, so far, are the appearances. Those

years of age, affected with tubercles and vomicæ, had, in July last, this less severe form of cholera, which soon gave way to all the hectic symptoms of her complaint.

I have examined were in general opened within, or about, twelve hours after death. Bodies at this season ought, however, to be examined as soon as possible, and always within at least six hours, if it can be done with propriety.

Of all the morbid effects in appearance, which I have observed after death in the bodies of persons who died of cholera in Danzig, the most characteristic, perhaps, has been the great congestion of blood in the sinus venosus and right auricle of the heart, and in the veins throughout the whole body; the next is the invariable contraction of the bladder; and another, which, although not apparently constant after death from this disease, is seldom or never to be met with after death from others—namely, slight spasmodic contractions, or movements, if they may be so called, in the muscular fibres here and there in the body, and more especially in the face and extremities, not only immediately, but some time after dissolution. These resemble Galvanic effects produced in the body after death.

The veins, and right auricle in particular of the heart, were full of black blood; some was always found in the left auricle; while very soft imperfectly coagulated lumps were found either in the right ventricle or within the aorta, either immediately at its commencement, or down below its curvature. These lumps were invariably as black as the blood found in the veins and right auricle; the thoracic aorta uniformly contained some black blood, but was never full, like the veins; the abdominal aorta also contained a little, but very little; the right ventricle had always a small quantity of black blood, the left ventricle a very little. The pericardium seemed more or less flaccid, and very often contained a quantity of dark brown serous fluid. The parietes of the heart in general seemed soft, and I fancied, in a few instances, that those of the left auricle seemed thickened; this, however, remains to be confirmed or refuted by subsequent examinations. I occasionally observed morbid blackish, or bluish, and, in one instance, whitish spots on the external surface of the heart.—The lungs were in general much more bluish speckled than in most other cases,—almost always collapsed, but dense from black blood—not as in hepatization of the lungs—frothy, black blood freely oozing from incisions made into them. The pleura, in its reflections throughout, from the anterior to the posterior mediastinum, and over the upper surface of the diaphragm, seemed in general of a dark dull red. The trachea, bronchia, and larynx contained a little frothy mucus, and were otherwise wet with a compound of serous and clammy fluid; but the internal mucous surface exhibited no vascular appearance. In general there was a considerable quantity of clammy, serous fluid found effused in the chest; all was wet, exceedingly soft and clammy, more so than I have been used to see after death from other diseases. The vena azygos was invariably full of black blood. The thoracic duct was in general empty, and seemed natural.

On detaching the calvaria from the dura mater, the latter was, in most instances, spotted all over with the black blood that instantly issued from the torn vessels, especially along the lines of the sutures, where they are most numerous, in the younger subjects particularly. The external surface was mostly of a dark bluish colour, and dry, but clammy feel. The internal surface of the dura mater, and its processes, or continuations, were not marked by any peculiarity, except, perhaps, in the appearances being more opaque, and feeling more clammy than usual. The tunica arachnoidea was in general of a wheyey, glossy colour, and somewhat clammy to the touch. Between this membrane and the pia mater, and more especially in the lower part of the cerebellum, there was occasional effusion or filtration of serous fluid; and in all instances there was considerable effusion of this fluid between the pia mater and the cerebrum and cerebellum both; in most instances it was found in the ventricles, in the fossulae at the basis of the cranium; and, indeed, wherever this effusion between the tunica arachnoidea and pia mater in parts of the cerebellum, and the pia mater and the brain itself at large, was observed, it was also invariably observed in the same

relative situations in the spinal marrow of those bodies in which the spine was examined—which were fifteen in number. In other instances, too, where there was effusion in the brain, we had only to elevate the pelvis and loins in order to see serous fluid issue forth from the spine through the occipital foramen. There was always a considerable quantity of thin black blood in the sinuses, in the inferior more so particularly. In all cases the congestion of black blood in the veins of the pia mater, in the *venæ Galeni*, and choroid plexuses, was great, accompanied with varicose dilatation of these vessels; and likewise the same relative congestion of black blood in the veins of the pia mater, in the spine, especially in the posterior parts of it, where these vessels being larger and more numerous, varicose dilatation was more conspicuous. The medullary substance of the brain seemed in some instances much softer than usual, but it might have been owing, in part, to the interval elapsed during hot weather between death and the time of examination. In some instances black spots were visible on incisions into the brain; at times, too, the cineritious and medullary substance both seemed relatively altered in appearance as well as consistence.—The state of the spinal marrow corresponded in all cases exactly with that of the brain.

After what has been said and implied of the venous congestion in the brain, spinal marrow, and thorax, it will be readily conceived in the abdomen, in which the large as well as small vessels are still more numerous and varied. The *vena cava abdominalis* and *vena portæ*, with the splenic and superior mesenteric trunks, and, in short, all their large tributary branches, invariably contained a considerable quantity of black blood: they seemed at times as if full of it, while the mesenteric veins always exhibited a characteristic black or bluish arborescent appearance throughout. The gall-bladder was not only of a deep green externally, but, in some instances, from a deep green to a bottle-green, and occasionally tinged here and there with yellow; and was in general distended, and full, or nearly full of fluid, generally black, and sometimes as if a little of yellow or brownish yellow bile had been mixed up in it. The internal or villous coat of the gall-bladder was in general between a dirty yellow-brown and brownish yellow—in a few instances it was a natural bilious yellow. The liver was invariably in a state of *engorgement* from the black blood, which, in all states of it, freely oozed out from the hepatic veins in particular on incisions into its substance: it was in general discoloured, even after sponging the membrane covering it, and I think most in the younger subjects, and those who had not suffered from previous affection of it. The spleen was also in a state of *engorgement*, and of a black purple colour,—and this independently of any alteration in its structure as referrible to other morbid states. The kidneys, notwithstanding the suppressed secretion of urine, did not exhibit any peculiar change in general, further than that of venous congestion. The same was observed in the pancreas. It is not easy to say whether the *ductus communis choledochus*, and immediate biliary vessels were in general contracted or not; sometimes I found greenish or vitiated bile at the opening of it into the duodenum, and sometimes I did not. I often found, in protracted cases particularly, the external parts of the duodenum and colon in contact with the gall-bladder, or near it, completely discoloured with yellow bile.—With respect to the stomach and intestines generally, I cannot say that I observed any effects of the disease beyond what is referrible to congestion of blood in the veins, and what might be attributed to the sedative nature of the disease. The mucous coat of the stomach, in particular, and parts of the colon, seemed, in some instances, soft, as if half macerated; indeed, the intestines generally seemed soft, and as if the internal mucous and villous coat could be separated from the muscular coat. The small intestines, I mean the jejunum and ileum chiefly, were more commonly of a dark dull red, or rather of a dark dull slate colour, on their external peritoneal coat, without any positive vascular appearance; sometimes of a pale slate colour, with vascular injection, or vascular congestion more marked; while, on the internal surface, they did not

exhibit the same colour generally,—still, in some instances, there was in some parts a modified appearance of it; while in various parts in others there was a manifest vascular appearance of the internal mucous and villous coat, though by no means corresponding to that externally. Besides the pale slate or leaden colour, and the dark red slate colour, I have observed a vascular dark red also—facts which will account for that tenderness or pain on pressure of the abdomen, so marked in cholera, especially in protracted fatal cases. In one instance of a young woman, who had died of true and very rapid cholera, the general external appearance of the whole of the small intestines was of a pale or light rosaceous hue, while that of the colon was quite pale. The mucous membrane throughout the whole canal was whitish, and as if half macerated.—Whether the brown patches, which are at times observed here and there on the internal surface of the stomach and intestines, are effects of the disease, or of previous chronic inflammation, is in some instances not easy to determine. The stomach and intestines, as might be expected, mechanically retained the last fluid ingesta; for, latterly, what came away, did so involuntarily. There were the remains of former mucus, more or less, throughout the whole digestive canal; and in true, rapid, and fatal cholera, little or no remains of feculent matter, except in its usual receptacles, namely, the commencement of the colon, the cæcum caput, in the transverse arch occasionally over across it, and in the sigmoid flexure, in which, in some instances, scanty portions of it were found. The mucous follicles in the internal membrane of the colon at its commencement, and Peyer's glands in the end of the ileum, were occasionally found in large compact patches, more or less continuous, distinct, elevated and somewhat indurated. Brunner's glands, as they are called, were not so observed in the duodenum. The colon externally, as well as the duodenum, particularly at its upper curvature, was discoloured at the upper part of the ascending portion, and beyond in the greater part of the transverse arch, but in the other parts it was of a pale, or pale lead colour. The peritoneum, in all its detached reflections, was more or less opaque, having lost its shining, glossy colour more than in most other congestive and sedative diseases of the system attended with fever, more even than in the compounds of remittent and intermittent fevers in tropical climates, with marsh miasmata, in which venous congestion is so very notorious.—In protracted fatal cases I occasionally observed chronic discolouration here and there on the internal surface of the stomach and intestines—in some instances of a dark brown, in others of a dark brown red, without being exactly vascular in appearance: at times vascular spots and patches were observed in some parts of the intestines, and the dark brown, and dark brown red in others; they were generally in the colon, the commencement above and below particularly, in the transverse arch, and sigmoid flexure. I observed parts of the colon in a gangrenous state, and chronic inflammation of the whole of the ileum, in one subject.—In several instances the lumbricoid ascarides were found in the intestines.—In some instances the commencement of the thoracic duct or receptaculum chyli seemed quite close and contracted.—The invariable close contraction of the bladder, I have not omitted to mention; it was mostly lined with a little whitish mucus.

JOHN HAMETT, M.D.

Statements of the Medical Treatment occasionally pursued by some of the Physicians in Danzig.

GENERAL blood-letting has not been adopted in the Cholera Hospitals, No. 2 and 3, which received the unhealthy poor of all ages, and those with chronic organic affections. Topical bleedings with leeches, however, to the head have been used, particularly in No. 3. In the Military Cholera Hospital, amid the very young men of powerful stamina, who are immediately attended to after the attack, bleeding is occasionally successfully adopted.

It has been found necessary to guard against the indiscriminate use of the hot water and vapour-baths in hot weather after perspiration has broken out, and, above all, in the clammy stage of the disease, and after marked venous congestion has taken place, when it seems to increase the congestion, which is particularly observable in the brain and heart. Either ought, as I have intimated, to be used in the critical moment at the beginning of the disease, or, at farthest, instantly after, if admissible even then. To obviate the determination of blood to the head, cold applications ought to be occasionally applied to it, while the patient is in the bath : such as muriate of ammonia, during its solution, and other very cooling applications. The patient should be most gently and otherwise judiciously placed in the bath with respect to the gradually inclined position of the body, and due support of the head, neck, and shoulders ; and the immersion, or subjection, should be short, merely time sufficient for the positive communication of heat and its effects, and no longer, when he ought to be as gently and judiciously taken out, well wrapt up in hot blankets, promptly laid on a bed, and gently rubbed with warm, dry, coarse, but soft thread towels, all over ; and wiped dry as fast as the clammy sweat oozes out. There is much handy and careful personal management requisite in this essential part of the treatment.

The hot vapour-bath has been, latterly, in general laid aside here. At first it was used, when the congestion of blood in the head particularly, and the bad nervous symptoms in general, were found to be greatly increased in consequence. Dr. Baum tried it in three, who all died shortly after it : he afterwards abandoned the use of it.

Imagining, from the exceeding irritability of the stomach and whole intestinal canal, that they were the primary seats of the disease, some gave the magistry of bismuth, formerly particularly recommended by Dr. Odier, and by Carminati of Pavia, and Bonnet, in France, in cholics, diarrhoea, &c., and lately by the Polish physicians in cholera : and others, amid the complication of morbid functions, with the nervous and animal debility almost wholly in view before them, trusted to stimulants in general, and, above all, to the carbonate of ammonia, a solution of phosphorus in the spirit of sulphuric æther, camphor, musk, &c. &c. With respect to the magistry of bismuth, it should be mentioned, that in the dissections of some of those who died after treatment with it, there appeared, according to the testimony of Dr. Baum, great inflammation of the bowels.

The inhalation of oxygen gas was recommended to the Prussian government by Dr. Schlesenger, of Marienburg, and by Sir Anthony Carlisle, I believe, in a letter in the papers to the Lord Chancellor Brougham : it had been carefully tried in two cases by Dr. Baum ; both of which, he states, terminated very soon fatally, although there had been apparent grounds for a favourable prognosis in these individual cases.

Draughts of cold water have been given in insatiable thirst, and craving for it—only by one physician however. A patient, whom I had seen drink copiously of cold water in the morning of the 12th July, died the same evening. Thirst, anxiety, oppression of the chest, and weight at the heart, were the prominent distressing symptoms in him.

The medicines* made use of in the Cholera Hospitals in Danzig have been in general, viz :

1. Stimulants and antispasmodics : as ammonium carbonicum, liquor ammonii succinici, spiritus sulphurico-æthereus (or Hoffman's anodyne liquor), spiritus acetico-æthereus, æther phosphoratus, i. e. solutio phosphori in spirit. sulph. æther. gr. vi. in hujus ʒj ; tra. ambræ griseæ cum moscho, mistura camphorata, opium, laudanum liquidum Sydenhami ; tra. opii simplex, vel thebaica ;

* Ex Pharmacopœia Borussica omnia.

tra. valerianæ æthereæ, oleum valerianæ, oleum cajeputæ, oleum menth. piperit, oleum animale *Dippelii*, tra. castorei, aqua menth. piperit., and various stomachic infusions, &c. &c.

2. Tonics and stomachics; as elixir aurantiorum compositum, pulvis aromaticus, cortex regius seu cinchona lancifolia, radix columbae, radix valerianæ, infusum valerianæ, radix serpentariae Virginiae, pulvis Doveri cum cortice cinnamoni, &c. &c.

3. Aperients; as pulvis rhæi, oleum ricini, calomel. &c.

4. Remedial means; as hot bath, 30 R., bleeding from the flexure of the arm, leeches, sinapisms, frictions, and blisters.

The system and scale of diet that have been adopted in the hospitals, it is perhaps unnecessary to mention.

JOHN HAMETT, M.D.

Extracts from Dr. Hamett's Opinions on the general Mode of Treatment of Cholera.

In epidemic cholera here we have, all at once, retching and vomiting, a watery diarrhoea, and sudden prostration of strength, with pending cramps, and fast-approaching venous congestion to obviate; here also are suppression of the secretion of bile, and of the secretion of urine at the same time to obviate, on both of which the healthy state and due circulation of the blood depend; and here also, amid the epidemic, there is necessarily a modification of the disease from difference in age, sex, constitution, and habit. In cholera the three grand functions are each and all deranged; and, therefore, much is to be done in all these at once. It is not this or that partial treatment. The various particular treatment ought to be most prompt*, and, if possible, simultaneous; and, under all the circumstances I have mentioned, must be regulated by the most distressing or prominent symptoms of the whole, on which the rest either depend, or to which they are subordinate.

The first object, accordingly, is to obviate the primary symptoms of the disease as quickly as possible, instantly after the attack has begun. Emetics are occasionally given here, and may, perhaps, be given in the first instance, while crudities are in the stomach,—certainly not after. I never gave, nor did I ever see them given in India: there the influence of climate alone, however, proved a most powerful emetic; but here the irritability of the stomach is not near so great as it is in India; and they leave less aggravated effects after the further vomiting excited by them is over. When admissible, the very mildest certainly ought to be given.

If there are no crudities in the stomach, or the patient is not taken ill after meals, a little of recent aromatic confection and calomel in the dose of from gr. iii. vel iv. ad gr. viii. vel x.†, mixed up with proportional quantities of laudanum, are to be immediately given, and followed up by regulated mixed doses of the compound tincture of cinnamon, or tincture of capsicum, and the spirit of

* Indeed, that the disease ought not to be suffered to advance one single step, if possible, without being instantly obviated, is seen from the rapid march of the deadly symptoms afterwards in my descriptions of them.

† These two last I mention from my past experience in India only, and not at all from what I have observed here. I have reason to believe, that I arrested cholera in a few instances by that very dose and warm stimulating drinks. I did not even put them on the list, for they were well in less than twelve hours after: and even here they may be given to men. The average dose is gr. v. ad gr. viii. Calomel is but little used in Germany and France, where the people are certainly less bilious than in England; but the English practitioners, above all, know its virtues, and when indicated.

any of the æthers, or of liquor ammon. subcarbonat. vel, &c., with, if indicated, some drops more of laudanum, in some appropriate vehicle; and again by powerful, permanent, and grateful stimulants as well: namely, established, strong cordials, occasionally good brandy itself, or, what is still better in most cases, proportional quantities of very warm brandy and water, occasionally repeated at intervals; or warm old best Madeira, sherry, or port itself, diluted, or without dilution; and a little of the concentrated solution of ginger in spirit, or Oxley's essence of ginger, or a few drops of any of the essential oils, may be added occasionally to these last.

The administration of these stimulants in all cases, their modified doses, and their occasional repetition, must, I need scarcely add, depend in a great measure on the previous particular susceptibility of the patient at the time, and on the consequent effects produced by them, as well as on the degree of the symptoms they are intended to obviate.

Calomel, in modified doses, however, ought in my opinion to be duly repeated at proper intervals at first, according to the symptoms, or consequent effects produced by it; when it should be modified in its administration, as I shall soon have occasion to explain. In India, I have remembered, it did not increase the irritability of the stomach; on the contrary, it rather tended to allay it in the first instance.

Should the retching and vomiting, and diarrhoea, nevertheless, continue, warm starchy *enemata*, with a little laudanum, ought to be administered, and occasionally repeated.

The hot bath ought, in my opinion, to be used in the way I have mentioned, and by all means quickly at first, especially when the skin is cold, or not suffused with a cold clammy sweat, with dry, warm frictions after; otherwise it is best to dry-rub the body all over with hot cloths, to apply afterwards incessantly hot flannels, and keep dry-rubbing the body gently as fast as the sweat oozes out, and with warm or hot flannels occasionally after: flannels besides, meanwhile absorb all the sweat. Various other handy means of promoting local heat in the trunk and extremities ought to be also resorted to, I need not mention the necessity of duly regulating the temperature of the room, and guarding against the great change to the patient, by removing him well wrapped up in very warm blankets from the bath into his bed.

Of the benefit to be derived from the use of the hot vapour bath, I cannot speak from my own observation here. Dr. Sinogowitz lauds it*, while Dr. Baum decries it; but where heat should be communicated quickly, I think the hot bath is better. At any rate, that time which is so precious here, is lost while waiting for it. In systematic medical institutions, however, it ought by all means to be ready at hand, and tried;—and I need not say how very indispensable, dexterous, as well as careful and tender personal management, and above all keeping the head† free from the vapour, are in the use of this bath.

Stimulating embrocations may be occasionally and beneficially used in the first instance, but only at short intervals for obvious reasons here.

Cholera is, perhaps, the only disease in which bleeding and stimulants are both admissible at the same time on just principles, as well as from the obvious benefit derived from their use. Bleeding ought certainly to be occasionally adopted in the commencement of the disease, especially in young and otherwise stout or healthy subjects, on the principle I formerly mentioned; and even occasionally after re-action, when the state of the pulse and general congestion indicate it.

* I saw the hot bath only used in the military Cholera Hospital myself.

† I said in a former report, that the heat of the bath increased the volume of the blood in the head: it may not do so in healthy blood to any degree; in cholera, however, I am persuaded it does; besides here the blood is notoriously altered.

Shaving the head, although I have never seen it done here, and keeping it bathed or sponged with cold applications, ought to be adopted where venous congestion so positively indicates it. Leeches ought to be applied to the temples and nape of the neck in marked congestion; blisters to the nape of the neck also—and, it would seem, in some cases, even to the epigastrium also, and abdomen especially at first; otherwise sinapisms in general to these last, as well as to the parts of the extremities most affected with cramps; and, blisters ought in my opinion, under certain indicating symptoms, to be applied, as well as frictions, to the region of the heart. By obviating congestion of blood in the brain, that in the spine is obviated proportionally.

Mercurial frictions* to the hollows of both thighs, and to the inner parts of both arms, ought, in my opinion, to be occasionally adopted, and that quickly, when mercurials by the mouth prove ineffectual especially.

Antispasmodics, as they are called, properly modified, should be duly or occasionally administered in the first stage or state of the disease.

The furred tongue, in the second stage, as well as the quality of the dejections in all stages; and the state of the intestines, liver, and gall-bladder after death, and indeed of the spleen as an ulterior retrograde effect, when we see that the current of the vena portæ is stopped from the suppressed secretion of bile, indicate the necessity of promoting biliary secretion and alvine excretion; and when the retching and vomiting have at all abated, they ought to be promoted as quickly as possible. This may be done, or at least attempted, in the weakest state, and is not incompatible either with the administration of antispasmodics, or regular tonics; either of which can be administered at the same time.

Combinations (to which I alluded) of calomel and the sulphate of quinine, with or without opium, seem to be indicated, and I think ought to be administered. There is really here some remote analogy between the malignant remittents of marshy places within the tropics and cholera, in respect to congestion of the blood, the absence of biliary secretion often, and great prostration of strength; and like cholera too, owing to a modification of infectious *miasmata* in climate, and like it also depending a great deal on constitution and habit. The use of diaphoretics, so occasionally useful in protracted fevers, does not seem to be indicated here at present; and of all these perhaps the *Pulvis Jacobi* in small doses is the most admissible, by reason of its promoting the effects of the mercury. Our unquestionable object here is to excite the liver and absorbents, both ways, by the lymphatics and lacteals, into action, and meanwhile the secretion of the urine itself so dependent as it is on their due action, and to restore the system from its sedative and exhausted state. Mercury with antispasmodics or regular tonics are consequently indicated throughout the disease.

The local treatment I have particularized. The tonics may be certainly varied.

The administration of mild stomachic purgatives, or aperients, should be persisted in, according to the state of the alvine excretions, throughout the whole of the disease, and occasionally followed up by that most efficient and valuable purgative, castor oil.—Salts, in my opinion, are pernicious in the beginning of the diseases, and even objectionable in the latter part; if given in the febrile state, they ought to be administered in half, or rather the third part of the common dose, and combined with aromatic confection and rhubarb, both to make up the deficiency, and also to modify them. The purgatives, after certain allowable intervals, ought to be followed up by some grateful hypnotic, after their operation is well over: and here the pulvis Doveri seems to be occasionally indicated, as well as other anodynes.

* Dr. Baum has assured me that he tried them in the case of a young woman with marked success.

The chances are, I am persuaded in my own mind, that where the treatment is adopted in the way I have mentioned, those marked eventual symptoms of heavy stupor, &c. &c. which I have so minutely described in the protracted cases of fatal cholera, would not ensue. These symptoms are, evidently, the consequences, in a very great degree, of the protracted suppression of the secretion of bile and urine, in the first instance, and which, as I have stated, would have been obviated by the Indian plan of treatment, under the modifications I have mentioned.

I need not enlarge upon the treatment in this stage of the disease; it is plainly indicated;—in the first, and commencement of the middle part of it, amid such a complication of distressing symptoms, only lies the difficulty. However, in this stage, or, strictly speaking, this modified state of the disease, the treatment evidently ought to be with a view of getting the secretions and excretions into play, and duly supporting the patient meanwhile: the former by alternatives, and occasional stomachic, or grateful purgatives or laxatives; and the latter by tonics. Calomel combined with antimonials, or with ipecacuanha, and rhubarb; or the efficient blue-pill combined with these last, ought to be now given here; sulphate of quinine,—interchanging it meanwhile with any of the established bitter infusions, modified by their corresponding tinctures; wine occasionally now also, &c. &c.; and last of all two or three tepid baths.

The particular diet and drinks throughout the disease, I have no occasion to mention.

JOHN HAMETT, M.D.

Extracts—On the Question of Contagion of Cholera at Danzig, considered solely from Facts.

THE following statements founded on the experience of the physicians in charge of the different cholera hospitals in Danzig, and of physicians, who at the same time attended cholera patients in their dwellings, and patients affected with other diseases, will show that they did not consider cholera evidently contagious. These statements are all authenticated by Mr. Gibsone, the British Consul in this place, who vouches for the high professional character of these gentlemen.

1st. Extract from a Report drawn up for Dr. Hamett, by Dr. Baum, physician-general of the Town Hospital in Danzig:

‘ As to the contagion of cholera morbus, there is a great contest among our physicians, five being for, and twenty against contagion.

‘ In my experience, the disease certainly proved not to be contagious. There were five waiters always near the patients: eight men were employed in rubbing and bathing; nine medical men visited the patients, of whom one was always in the room in the day-time; two watching every night: no one of these twenty-two persons fell ill. Many patients suspected to labour under this disease were brought into the same wards, but the disease did not appear in them.

‘ Although the medical assistants, and the eight labourers were constantly going from the cholera wards to the other patients, there were but five patients who caught the disease in my hospital. Now the number of patients on June 1st, amounted to three hundred; three hundred were received in the month of June, so that out of six hundred patients only five got the disease, which is much less than the common number of patients taken ill with cholera, among an equal number of poor, wretched, unhealthy people in the town. Of these five persons only two became ill in the same room; the other three being scattered over the whole large establishment.

‘ The disease made its appearance in Danzig without communication with any unhealthy place. The only ship about that time coming from such a place was the Monna, Captain Brandt, from Riga, who arrived the 30th of May, two days* after the first appearance of the disease.

* It has been proved to be three days after the first appearance of the disease.

' It did not spare institutions which were perfectly shut against any communication with the town. In the public gaol, one person ; and in the two institutions for poor children and orphans, some children were attacked. It in the same way broke out in Elbing, ten German miles from Danzig, after the quarantine had been carefully kept up between the two places.

' It was preceded by a remarkable change of weather ; the temperature often differing in some hours' time nearly ten degrees R. It was preceded by immense quantities of fish being caught, and of so low a price, that all the poor people had lived the whole months of April and May on almost nothing else. *Esox belone* and *clupea sprattus* were the most common.

W. BAUM, M.D., Physician of the Town Hospital.'

Danzig, Aug. 1st, 1831.

This is the writing and signature of Doctor Baum.

ALEXANDER GIBSONE, British Consul.

2. Extract from a Communication to Dr. Hamett by Dr. Baum, dated Danzig, September 17th, 1831, which is authenticated by Mr. Gibsone :

' The last three striking cases of the epidemic cholera that occurred in the Town Hospital at Danzig, remained in their beds in the common wards, and there appeared no spreading of the disease ; no person was attacked in the hospital after them.'

3. In the Military Cholera Hospital in Danzig, have been received from the 8th of July to the 28th of August, 1831, inclusive, ninety-eight cholera patients :

For the superintendance of the Cholera Hospital—A. One regimental physician. B. One assistant-surgeon of the first class. C. Four sick attendants. D. One porter.

For the superintendance of the Contumace division of the Institution—A. One inspector of wards. B. One assistant-surgeon. C. One cook-maid. D. Four to five attendants, according to the number of those in the Contumace. E. Two sentinels, who are regularly relieved from the military guard in the Hospital.

A sick attendant in the Cholera Hospital was attacked with the *cholera cardialgica*, but was cured in three days.

The which testifies,

DR. SINOGOWITZ, Regimental Physician,

Danzig, Aug 29th, 1831.

Physician of the Cholera Hospital.

This is a correct translation of the certificate drawn out, and signed by Dr. Sinogowitz, Regimental Physician, &c.

Danzig, Aug. 30th, 1831.

ALEX. GIBSONE, British Consul.

4. Between the 1st of July and 30th of August, 1831, there have been received into Cholera Hospital No. 2, one hundred and forty patients affected with cholera.

In attendance on the patients there have been—A. One physician. C. One barber-surgeon, and superintendent. E. One assistant-surgeon. A. One matron. C. Six men in immediate attendance on the sick. D. Three servants of all work. E. Two porters.

Besides these, there have been two foreign physicians in daily attendance on the sick for one month.

Of all these there have been only three of the sick attendants slightly attacked with the primary symptoms of cholera, owing entirely to fatigue and profuse perspiration, and catching cold in consequence.

I certify the same, this 30th day of August, 1831, in Danzig.

EDWARD OTTO DANN, H. M. D.

and Physician of Cholera Hospital No. 2, in Danzig.

The foregoing is the hand-writing and signature of Doctor Dann, H., given to Doctor Hamett.

Danzig, Sept. 1st, 1831.

ALEX. GIBSONE, British Consul.

It will be proper to state here, that in Cholera Hospitals No. 2 and No. 3, the sick attendants commonly slept in their clothes, and were continually subject to profuse perspiration, in consequence of being exposed to the heat and vapour of the hot-baths, that were incessantly administered. Hence, from their severe duties and close confinement, they always looked pale, and were occasionally indisposed. The washing in these Cholera Hospitals was great and incessant. In No. 3 it was done under a shed.

I have particularly inquired of medical men who have attended patients affected with cholera, and patients affected with other diseases at the same time, and have not heard of one instance of cholera taking place among the patients or their families in consequence. Dr. Dann, senior, who has had more general practice in cholera, other diseases, and *midwifery*, than any other physician in Danzig, has assured me that there has been no instance of the disease being communicated by himself or his clothes; and that he has not heard of any by other general practitioners like himself.

I could have procured additional evidence in this respect from all the medical men at Danzig, who have had experience in cholera.

There have been instances of a wife, or child, or both having slept in the same bed with a cholera patient, without any bad consequences ensuing; and the instances of escape of whole families shut up in small rooms with cholera patients have been numerous. The four first cases of the epidemic in Danzig, the Separate List, and the able communications to me from that observant, talented, and conscientious Gentleman, Mr. Gibsone, the British Consul at Danzig, will afford proofs of these statements.

In the history of the first appearance, and subsequent spread of the disease, no evidence of contagion has appeared; while in the police reports in the General and Separate Lists, a probable, or predisposing cause has been assigned for almost every case of it, during the first eight weeks of the epidemic. The facts here adduced, with all those relating to the shipping, harbour, &c. &c., which are embodied in the history of the disease, prove indeed extraordinary escapes from it.

Finally, it has been evinced, that the disease is not necessarily produced, either by inoculation of matter from a recent subject of it, or from inhalation of the *effluvia* arising from one left exposed for several days in a putrid state, swarming with insects, in a neglected cholera burying-ground contiguous to a populous village; the former, particularly in my own person, twice from casualty at dissection; the latter from the fact itself contained in an accurate statement, authenticated as usual by Mr. Gibsone.

If the disease, however, be contagious, in the personal communicable sense of the term, independently of what I conceive to be the adequate cause of it,—namely, a modification of infectious *miasmata*, specifically operating on certain constitutions and habits, rendered more or less susceptible in the manner I have specified in the history of the disease; and the numberless instances of escape, which I have made to appear, are not sufficient to overpower the argument of contagion, deduced simply from the gradual, but irregular and uncertain appearance, and spread of the disease throughout the world, they at least deprive it of a great part of its terror.

JOHN HAMETT, M. D.

 Our readers will see that the foregoing most valuable document contains the only minute and circumstantial account, semeiological and pathological, of the Continental cholera, which has yet appeared. If Dr. Hamett has evinced *liberal* ideas in respect to the propagation of the disease, we hope a *liberal* Government will not pass over unrewarded, the only Naval Medical Officer which it has employed in this investigation. *Nous verrons!*—ED.

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MEDICO-CHIRURGICAL REVIEW.

No. XXXII. APRIL 1, 1832.

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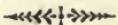
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INTELLIGENCE, CORRESPONDENCE, &c.



The Index and Title-page of this volume has been unavoidably deferred till next Number.

* * In consequence of an *addition* of 72 pages, of the smallest type, to this Number, we are compelled to tax our subscribers with one shilling extra; a tax which does not defray the paper and letter-press, leaving out of the question the expense of literary composition, which has been peculiarly heavy this quarter. We venture to say, that none of our subscribers will complain of the price of this Number of the Journal.

Literary Announcement.

Mr. SCHLOSS informs us that he intends to publish a new Work, entitled the *Anatomy of the Horse*, by Professor GURLT, of Berlin. It is to be translated from the German. For remarks on Mr. Schloss's Plates of Human Anatomy, we refer to the Bibliographical Record.

The name of the Surgeon at Banbury, who details the case of cholera there, is Mr. BUSBY: the communicant Mr. H., not Mr. J. CLARKE, of Lamb's Conduit-street.

THE
Medico-Chirurgical Review,
No. XXXII.

JANUARY 1, TO APRIL 1, 1832.

I.

REPORTS OF MEDICAL CASES, SELECTED WITH A VIEW OF ILLUSTRATING THE SYMPTOMS OF DISEASES, BY A REFERENCE TO MORBID ANATOMY, &c. By *Richard Bright*, M.D., F.R.S. &c. Longman, 1831.

[Last Article.]

No other of the sciences is half so unprecise in the adjustment of its etymologies as medicine. Terms are employed in it now, terms have been employed in it for centuries, which have never been defined, or, if they have, possess significations so loose and unattached, that to all practical purposes they are unintelligible. Take *irritation* for an example. What has been meant by irritation—what is meant by it? If the various applications of this term be collated and compared, we defy any lexicographer in Christendom to construct a definition of it out of such materials as will bear upon one half of them. By some it means simple stimulation, whether of function or tissue; but no two of this party can agree in fixing upon the precise amount of increased activity, to which the irritated function or tissue is excited. With others it implies somewhat more than mere *excited* action—the first grade of *altered* action; but whether this change of action amount in tissue to change of structure, and in function to change of secretion, is not ascertained. By a third class we find irritation employed to express chronic, subacute, and even active inflammation, together with all the states and conditions which it is made to denote by the two preceding parties; but these unschooled grammarians are at a loss to draw the line of demarcation between an irritated state of organ, depending on altered structure, one arising from the first stage of inflammation, and another proceeding from over-active but still unaltered function, between all of which they feel that there ought to exist a difference, were it only for practical convenience. Dr. Bright has evidently experienced the annoyance resulting from this unlicensed and unmeaning use of the term irritation, and it is not to be wondered at, if he have, in a work exclu-

sively devoted to diseases of the brain in which irritation and inflammation so often wear each other's mask, are so intermingled, or pass and repass into each other's state with so much facility, been occasionally betrayed into an application of this word, which custom has sanctioned because convenient, and criticism has tolerated although improper.

The section on which we now enter is appropriated to diseases of irritation, including hysteria, chorea, neuralgia, epilepsy, tetanus, and hydrophobia ; "some of which, the Doctor admits, are strictly functional, while others occasionally owe their origin to structural changes." Hysteria and chorea are, perhaps, tolerably pure specimens of the effects of irritation, considering this word, as it ever should be considered, to denote a mere state of functional or textural excitement, with which no organic alterations nor any inflammatory action of consequence intermix. But neuralgia, tetanus, hydrophobia and epilepsy, not only so often arise from actual disease of texture, but are so often complicated with no ordinary indications of local inflammatory action, that in strict propriety of language they are no more pure diseases of irritation than delirium tremens is a pure disease of inflammation, although catalogued and described in these "Reports" among such. The action which they frequently portray "is," to use the language of the Doctor's *preface*, "irritation so mingled with inflammatory action as at least to deserve the name of inflammatory irritation." All these nervous affections, are, however, so closely allied to each other, that to have separated them and to have treated of them separately might have given rise to frequent repetition and inconvenience without rendering their essential characters more perspicuous, or their cure more practicable. The inflammatory action, with which they are often complicated, seldom admits of decisive depletion, and is not unfrequently aggravated by such treatment ; and, although what was at first irritation, in the strictest meaning of the phrase, may at last terminate as well as be accompanied by organic disease, yet experience has shewn that the most successful practice—

—"Proceeds on the idea that irritability depends upon diminished tone, and is apt to be accompanied by congestion ; and that a certain state of the vessels, either with or without organic disease, is often the irritating cause :—that, therefore, sanguineous depletion may be necessary either to relieve the brain from blood which is depressing the nervous power, and is in this way truly a source of diminished tone ; or to take off such partial congestions as arise in the course of the disease ; or to allay such local actions as may precede important organic changes, or may be afterwards induced by morbid structure : but that sanguineous depletion is to be used with caution, because it has, when unnecessarily employed, a direct tendency to diminish tone and increase irritability ;—that purging, for nearly the same purposes as bleeding, is often useful ; but is much more frequently admissible, as it tends to promote more healthy actions without diminishing power :—and that when obvious sources of irritation and obvious depressing causes are removed, it is to those remedies which more directly allay irritation, and to those which increase the tone, and thus diminish the irritability of the system, that we are to look with the greatest confidence ; for which purposes the mineral preparations, as those of iron, zinc, arsenic, and silver, are powerfully efficacious, and may be occasionally administered with hyoscyamus, combined with camphor, and some of the diffusible stimuli, which of themselves often act very favourably." 609.

Hysteria. There is certainly no organ in the female constitution, which maintains such frequent and intimate communion with distant textures and functions, as the uterus, whether in its pregnant or unpregnate state. The slightest derangement in its functions is instantly succeeded by a whole train of sympathies, as distinct as they are distant. Each organ acknowledges how seriously it is interested, each function proves how extensively it is implicated. Hence does it happen that there is no class of diseases, to which the female is exposed, so changeable in their symptoms, so capricious in their movements, and so fluctuating in their seat, as those in which this organ participates, and of these, perhaps, none is more uncertain and less uniform in every respect than hysteria. No clown, that ever enlivened a pantomime, has assumed a greater variety of forms, attitudes and features. It is a disease, which possesses to a marvellous extent the property of ubiquity. It sometimes attacks structures, and sometimes functions; now it wears the garb of spasm; then of palsy; in this instance it presents symptoms of inflammation, in that of extreme irritability; here it appears most prominently in organs situated at the extreme point of the circulation, there it concentrates itself exclusively in the region of the uterus. These various and opposite states of disease it, no doubt, seldom apes in an unmixed form. The inflammatory symptoms are usually more or less complicated by such as are purely nervous; its paralytic features are generally intermixed with indications of excessive action in some organ; and such instances, as are marked by mental disturbance, likewise betray more or less spasmodic ailment. In this way it is rendered tolerably evident that, however we may theorize upon this disease, its influence is principally exerted on the nervous system, so that it becomes a point of considerable practical importance to recognise it from purely inflammatory diseases on the one hand, and purely paralytic affections on the other. The inflammatory disease, which Dr. Bright has known hysteria most frequently to imitate, is peritonitis; and "nothing," he observes, "but the distinct history of the case and the careful watching of its progress can sometimes enable us to detect the true nature of the complaint."

"In general, some great incongruity of symptoms will be detected;—a tenderness of the abdomen, indicating inflammatory action, beyond any thing which the pulse, or the condition of the tongue, would authorize us to infer; a hurry and even labour of respiration more marked than in the embarrassed breathing of peritoneal inflammation; a sudden subsidence of symptoms, and their sudden return; a shifting and changing of the tender or painful part; and sometimes the decided intervention of hysterical symptoms, and the very frequent accompaniment of some evidence of mental causes, or of irritation and deranged function in the uterus itself. All these, together with the general aspect of the individual, will frequently be guides and indications to assist us." 453.

Not unfrequently it apes inflammation of the liver so closely, as to require considerable tact in detecting the fraud. In the following case both hepatitis and peritonitis were simulated; and, although the active treatment, which these supposed affections called forth, was succeeded by marked relief, the alleviation of symptoms which they occasioned was only temporary, and was ultimately followed by pernicious consequences.

(206.) The daughter of a medical man was supposed to labour under

inflammation of the liver and peritoneum, in consequence of being frequently seized with pain and tenderness of the abdomen, more especially in the right side; for which she had been often bled to a large extent, and put under the influence of mercury. The attacks came on rapidly and disappeared as quickly; her pulse was quick, her nights were restless, and she was occasionally delirious. She was affected with dysmenorrhœa and leucorrhœa, and her lower extremities were so weak as to be almost paraplegic. From the frequent large bleedings her aspect had become blanched and puffy, and this debility arising from disease had been evidently increased by the treatment. Astringent lotions were ordered for the leucorrhœa, and zinc and gentian, persisted in for several weeks, completely dissipated every symptom.

In some instances the spleen, in others the kidneys, and in others the uterus are the suspected organs. The heart, lungs and pleura are also occasionally involved, and the brain and membranes do not always escape. In this way has it happened that hysterical patients, with weak and nervous constitutions, whose stamina were unequal to the onus of active remedies, have been reduced until they either sunk under the treatment, or gave way to an affection which, under more skilful management, might never of itself have been sufficient to extinguish life. In the 208th history, the Doctor records what he considers the symptoms of hysterical headache, which are so very similar to those of idiopathic derangement, that some may be found to question their nervous origin.

(208.) A young woman, whose catamenial discharge was somewhat irregular, became affected with at first slight, but afterwards excruciating headache, attended with intolerance of light, a frequent sharp pulse, furred tongue and vomiting. Leeches were applied to the temples, and twelve ozs. of blood were drawn from the arm; but the blood was uninflamed and the pain undiminished. Free purging was then tried, but with little benefit. A blister was applied to the neck with more advantage, and the compound steel mixture wholly removed these symptoms.

Not only is hysteria equivocal in the organs it apparently attacks, but it is equally so in the kind of action which it seemingly establishes. The functions, as well as the structure of organs, very distantly situated from the parts originally diseased, are disordered, giving rise to a host of most discordant and anomalous phenomena. Thus the respiratory apparatus is very frequently implicated, rendering the respiration violent and irregular—the organs of deglutition are often deranged, producing difficult or impracticable swallowing—the vocal apparatus is invaded, causing the voice to be either wholly suppressed or emitted by spasmodic ejaculations—the heart is attacked, and the consequences are violent palpitations and irregularity in the pulse—the functions of the brain are confused, and melancholy, delirium or madness follows—the entire muscular system is enspasmed, and partial or general convulsions result. These are the most frequent and favorite simulations of hysteria, and very seldom does any pure instance of this affection happen, which is not marked by more or fewer of these spasmodic symptoms; but the reasons for one class of functions suffering in one case, and a different class laboring in another, are only to be found in some idiosyncrasy of constitution, or susceptibility of structure.

A lady lay for more than a fortnight, suffering incessantly from a convul-

sive effort resembling hiccup, which was distinctly audible in different remote parts of the house, and which had so seriously reduced her strength, that the result was looked forward to with anxiety. But a blister to the nape, cold to the head, and frequent doses of æther and brisk purgatives, so rapidly dissipated this unfavourable state, that in two days she was quite well. A female who had diseased mamma, was seized with alarming dyspnœa, attended with a sense of tightness across her chest, which some considered to depend upon inflammation of the lungs. The pulse was quick, but weak; the respiration was laborious, but unattended with cough; her feet were cold, and she was in a state which might have resulted from sudden effusion into the chest, or the bursting of an aneurism. This was hysteria, and assafoetida was its cure. A woman was supposed to suffer from constriction of the œsophagus, in consequence of the difficulty and pain with which deglutition was performed. But, when a probang was introduced, to discover the seat and size of the contracted part, the irritation of the instrument induced an hysterical paroxysm, thus betraying the true cause of the dysphagia; and, what is somewhat peculiar, the fit, which had been thus provoked, was immediately followed by hysteria in *several* females in the ward.

The instances, which we have now on record of this disease propagating itself by sympathy, are so numerous and so well authenticated, that this communicative property must be regarded as an occasional feature of hysteria. Some, anxious to explain such cases in a more intelligible and ordinary way, have endeavoured to account for them upon some epidemic cause, or some local peculiarity. But no solution of this nature, yet seen by us, has been a whit more intelligible than the one it attempts to supersede. We yawn by sympathy, we laugh by sympathy, we weep by sympathy, we stammer and lisp by sympathy, and are not such sympathetic acts as unintelligible, although indisputable, as any other form of convulsive movements? Besides, in the great majority of those instances in which hysteria, chorea, or convulsions have seemed to spread by sympathy, no local cause has been discovered, which could be etiologically connected with the phenomenon.

A middle-aged woman came into hospital with loss of voice and speech, her tongue was protruded in a straight line from her mouth, and the lower jaw shivered when she attempted to speak, as from ague. She had been subject to hysteria, and for the last four years felt occasional numbness and pricking sensations in her hands. Some of these symptoms appeared indicative of palsy, but more minute inquiry convinced the Doctor that they were hysterical. She lost fourteen ounces of blood from the neck by cupping, her bowels were actively moved, and she took camphor mixture with tincture of assafoetida. Relief immediately followed, and in a few days she was quite well.

It is not uncommon to meet with hysterical females, who suffer under great weakness, if not total palsy of the lower extremities. On the most minute examination of the spine, neither tenderness nor deformity is discoverable. They have sustained no known injury in either the head or back, and, although unable to walk or stand, the urine and stools are passed regularly, and with complete cognizance of the will. If the catamenial discharge be examined, it will in general be discovered faulty, either in its periods of return or quantity, and local stimulants with moderate purging and cordial tonics are found to be the most beneficial remedies.

(218.) A delicate young woman was placed under the Doctor's care, having lost the use of her lower extremities for the last seven years. The spine was carefully examined, but nothing unnatural could be detected. Her catamenial secretion had been obstructed about the period when paraplegic symptoms occurred, and for the last two years had wholly disappeared. Her bowels were constipated, and she occasionally complained of headache. The condition of the stomach and bowels was improved by tonics and antimonial ointment, and blisters were applied to the loins. For a considerable time little improvement was produced, but the catamenia gradually returned, and after having been seven or eight months under treatment, she got well and "left the hospital walking, as if she had never been ill."

In constitutions of the hysterical temperament, not only is the entire nervous system in an acutely irritable state, but the mental faculties frequently present great peculiarities. The imagination is vivid and most fanciful, the taste is eccentric and most capricious, the perception is active and most deceptive, the judgment is weak and undetermined, the passions are feelingly alive to the slightest stimuli. The degrees, in which these mental peculiarities exist, are as numerous as the constitutions which they inhabit, and as varied as they are fugitive. Sometimes they deviate so slightly from the ordinary standard, as scarcely to betray any marked difference; but it occasionally happens that the mind is so warped by the bodily infirmity, as to be most seriously unhinged. A thousand complaints are fancied by the hysterical so circumstanced, which are not the less injurious because they are imaginary. Being beyond the reach of detection, they are of course beyond the influence of remedy. Females have been thus confined to bed for years, their strength has been slowly undermined by confinement and mental agony, and although no skill, which could be consulted, nor any diligence which was employed, could discover any actual disease, they have at length expired with all the indications of a most diseased and dilapidated fabric. It sometimes happens that, after medicine has done its utmost in such cases without effect, the constitution suddenly and unaccountably re-adjusts itself without assistance, as in the following instance.

(219.) A young lady of amiable dispositions and cultivated mind had been confined to bed for above nine months, before the Doctor was called in. At that time every attempt at motion was succeeded by a paroxysm of agony and agitation, which almost overcame her. She had no appearance of important disease, and the range of medicines, which had been tried for her relief, but to no purpose, was so extensive, that little hope could emanate from that quarter. She complained of constant throbbing in her temples, and she had almost lost the use of her lower extremities. As some soothing effect seemed to be produced by stimulating enemata and pills which she had been taking, they were exchanged for bread-pills and injections of plain water, on the belief that her complaints were principally imaginary, and these inert medicaments were found of equal efficacy. After this time she was frequently visited by the author, but no improvement was perceptible, until "once, after having attended altogether about nine months, I called after an absence of nearly a month; her sister met me at the street-door with a smiling face, to tell me that our patient was quite well: and on inquiry she related how three mornings before, under a deep religious impression, she

had completely recovered all her powers; and I found her sitting up working and amusing herself, as if she were completely convalescent from some ordinary illness."

Were Irving's disciples to meet with a few such cases as that of this young lady, the story of Miss Fancourt would be noised abroad once more with redoubled confidence, and the gift of healing would be only equalled by the gift of prophecy! In this instance there was obviously no more serious malady than functional disturbance, and although no allusion is made to the state of the catamenial discharge, there is little doubt but that it had been deranged, if not wholly arrested. The hopeless condition, to which this hysterical hypochondriasis may reduce the constitution, is well illustrated in the succeeding passage.

"I am at this time occasionally consulted about a lady, who has been confined to her bed for between four and five years, giving way to all the morbid feelings of this dreadful disease to such a degree, that, although no one, of the many who have been consulted, has ever been able to detect any actual disease, she is now emaciated to the last degree; her stomach, by long yielding to its apparent debility, is at length reduced to such a condition that it will admit of scarcely any nourishment, and the patient exists almost entirely on brandy and water, of which she drinks a most incredible quantity. She sits propped up in bed, speaking in a whisper: her countenance blanched: her hands emaciated; her eyes closed to the light, and dreading almost a footstep in the chamber, on account of the pain it excites in her head.—In her case, remedies are but imperfectly persisted in, and the disease fostered by the ill-judged sympathy of over-fond relations." 463.

No doubt the uterine derangement which usually accompanies this disorder, whatever symptoms it may assume, may and does not unfrequently produce actual disease in both textures and functions previously susceptible, and no organ seems more obnoxious to these sympathetic affections than the brain. Hence the importance of obviating as much as possible the primary symptoms, and of attending to the manner in which the uterine functions are discharged. It is well known that the uterus may itself become so diseased by long irritation and abuse, as to convert what was only a periodical and purely functional derangement, into a permanent and incurable disease. In the following history such symptoms supervened upon a diseased condition of the cervix uteri, as set treatment at defiance, and exhausted what had been a healthy and robust woman.

(220.) A female, upwards of 70, became the subject of violent nymphomania, attended with such mental disturbance as required restraint. This disease preyed upon her for nearly five years, and after reducing her from a state of robust and active health into a paralytic state of body and imbecile condition of mind, it ultimately destroyed her. The head unfortunately was not examined, but the only disease of note to be found in either of the other cavities was situated in the uterus. At the orifice of this body grew a tumour of a vesicular character, as large as a hazel-nut, and along its internal surface were several smaller ones, which had formed beneath the mucous lining, but by enlarging had gradually pushed it before them, so as to appear within the uterine cavity. The cervix uteri was much thickened and indurated, and on being cut through two or three cysts of the size of peas were discovered in its substance.

The first organ, therefore, to which the practitioner's attention should be directed in hysteria, is the uterus. Should it prove either functionally or structurally deranged, such measures as are best adapted to remove these states must be employed, and any phenomena, which may arise from the sympathies of distant organs, must be treated as either originating in this source, or most intimately connected with it. As has been shown in several of the preceding cases, these sympathies are occasionally so severe, as to require distinct treatment. Local congestions form in consequence of local susceptibilities to action, and hence does it happen that local and even general bleeding must sometimes be resorted to. The Doctor, however, very properly objects to free depletion in all cases, where fugitive and anomalous pains arise; believing that tonic medicines will not unfrequently dispel what at first sight might appear the results of inordinate activity.

"I have seen pains the most acute, particularly in the head, only aggravated by the loss of blood, and yield readily to the compound steel mixture.—Cold applied to the head, and more especially the sudden application of cold, assists in diminishing the cerebral congestion: and by the shock of cold water to the surface of the face, it is not improbable that some direct effect is produced on the par vagum and its associated nerves, which seem deeply implicated in hysterical attacks.—Blisters are likewise very useful, applied over the parts affected with hysterical pains, and to the nape of the neck in various and frequent forms of such diseases.—In all the forms of hysteria, great assistance is occasionally derived from the class of remedies included under the general appellation of diffusible stimuli; as the ammonia, the camphor, and the æthers; and to the former of these I have seen many obstinate cases decidedly yield; and amongst others, severe and long-continued local pains, in the cure of which the belladonna plaster has also appeared materially to assist." 467.

Chorea. A disease in some respects resembling hysteria is St. Vitus's dance; but as in hysteria the muscles of involuntary motion are most affected, in chorea those under the direction of the will are principally concerned. In many cases it has obvious connexion with uterine derangement; but in others either the sex or age of the patient precludes the possibility of such relationship. Like hysteria it may arise from sympathy; it is also certain that it has originated in fright; injuries of the head have acted as its exciting cause; and it has been so often found associated with rheumatism and dentition, that these diseases the Doctor apprehends may in some instances have favoured its appearance. It exists in an acute and chronic form; varieties which are in many respects worthy of distinction. When it approaches with acute symptoms children are its most frequent subjects, and males are less exposed to it than females. The convulsive movements are violent, and if restrained wear out the patient, who sinks exhausted with dry brown tongue, muttering delirium, and other symptoms of advanced typhus. In the chronic variety these convulsions are less violent, seem to attack males more than females, are often continued by habit, proceed without danger, and are seldom cured. Chorea has occasionally lapsed into fatuity or confirmed madness; its analogy to epilepsy and tetanus is striking, and from the nature of the treatment which is most successfully pursued, the author is inclined to suspect a close relationship between it and delirium tremens on the one hand, and hysteria on the other. Dr. Bright has known it to terminate fatally in six instances. In two of these cases the patients were plethoric women, of an age most favourable to uterine irritation. In a

third the woman was four months advanced in pregnancy; and in the fourth, which is fully recorded by the author, dissection disclosed abundant evidence of uterine disease.

There seems to be a predisposition in some families to chorea so strong and so well-marked, as to give to it in the eyes of some the appearance of an hereditary malady; but our knowledge upon this point is as yet too limited to entitle us to regard such occurrences as any thing more certain than accidents. The Doctor has attended a brother and sister in this disease, whose mother had been addicted to it when a child; and on another occasion, after having dismissed a little girl cured, her cousin, who had been living at a distance, and who had never communicated with her, took ill. The following cases will illustrate chorea, as arising from fright, sympathy, exposure to cold, irregular menstruation and diseased uterus.

(228.) A girl, aged 18, was affected with this disease, but the convulsions were principally confined to the left side. Four years before the present fit, she had an attack brought on by a fright received from a woman appearing to her in a white sheet, which continued for six months, and five months before admission into hospital she had been again alarmed by thieves breaking into her house, in consequence of which, as it was believed, the disease recurred.

The immediate effect of fright in this case was to derange the menstrual discharge, and it is not improbable but that in most such cases it is through this channel that the nervous system is disturbed. In the case immediately preceding the patient had also been frightened by having been shut up in a coal-hole, and was attacked by the disease ten days thereafter. But as she was only five years old, the menstrual functions could not have been influenced.

(226.) A girl of slender make was subject to chorea in a slight form for six months before admission into Guy's. She attended a school, in which a little girl was affected with the same disease, and no other cause could be discovered for her illness than that she either unconsciously or intentionally imitated this girl, and thus formed a habit which she could not afterwards shake off.

In the 233d history the disease wears a complicated aspect, being closely combined with rheumatism. The right leg and arm were first affected with severe pains from exposure to wet, and in about three weeks subsequently these rheumatic pains were displaced by choreal symptoms, which infested the same parts.

(237.) When the menses first appeared, Ruth Grenier first complained of numbness of the right arm, and irregular motion of the fingers of the right hand. The pil. aloës c. myrrha were given every second night, the mist. ferr. comp. every six hours, and a shower-bath was ordered every alternate morning. In the course of four days the catamenia appeared, but the choreal symptoms continued unabated. To relieve some sickness and headach, which had supervened, twelve leeches were applied to her temples, and a rose-draught was given; and ultimately the sulphate of zinc was substituted for the aloës, myrrh and iron, under the exhibition of which she got well.

It will be seen by this as well as several other cases that one side of the

body is much more severely attacked than the other, and it sometimes occurs that the disease is so exclusively confined to one side, and so severe as not unfrequently to be mistaken for hemiplegia at the first visit. The next case proved fatal.

(239.) A girl, 13 years of age, six months before her admission into hospital, had an attack of rheumatism, from which she completely recovered; some time after which she had an ulcerated sore throat, attended with headache, globus hystericus and some mental delusion, and as these symptoms disappeared choreal spasms succeeded, her spirits sunk and her strength failed. The catamenia had not yet appeared, the bowels were habitually obstinate, the appetite voracious, the tongue white, and the pulse was 120. A blister was applied to the nape, a purgative of rhubarb and calomel was given, and the mist. ferri comp. was ordered at first in half, and afterwards in oz.-doses, six times a day. Her symptoms improved slightly under these medicines, but the pulse still kept up although languid, and objects appeared double. The pil. aloes c. myrrh. and extract hyosc. with camphor were added to the tonic mixture and continued for a fortnight, when they were changed for a pill composed of zinc and gentian, and to these afterwards was joined a small quantity of port. The disease, however, pertinaciously advanced, until cold affusion was had recourse to, by means of which some tranquillity was procured at night, and by increasing the dose of the zinc to ten grains every eight hours, and persevering in the use of stimulating purgatives and the shower-bath, in two months "she left the hospital well." After remaining "quite well" for many months she relapsed in consequence of some mental agitation, to which she had been exposed; but she again recovered, and being again exposed to some excitement in a more severe form, she again took ill, and died with the most confirmed and intense symptoms of chorea. The skull-cap was thin, there was a small quantity of water beneath the membranes, the surface of the convolutions was rather more vascular than natural, and the cerebral substance displayed rather too many vessels. The plexus choroides were turgid with blood, and the vessels running over the corpora striata and thalami were full and large, but there was no effusion within the ventricles. The pia matral covering of the spinal cord was rather vascular; between the cauda equina and half-way up the spine were seen five or six bony plates above the tenth of an inch in diameter, attached to the pia mater, but the corpora pyramidalia and olivaria were most carefully examined without betraying any marks of derangement. The uterus was large, and its cavity extensive. The right ovary contained a cyst filled with a tenacious red substance, and the right fallopian tube, which was quite pervious, had its fimbriated extremities tipped with botryoidal-shaped deposits of semi-transparent bone. Attached to the ligaments of the uterus on each side was a small vesicle hanging by a peduncle, along which vessels were seen to pass, and a few vesicular bodies were found in the left ovary.

The extent to which uterine derangement may influence the general health is here well illustrated. How far some of the morbid products disclosed by dissection were cause or effect, it may be difficult to decide; but it appears more than probable that the disappointment in love, and other mental disturbances which this girl suffered, had more than a general effect either in

predisposing to or advancing the uterine disease. The bony deposits upon the spinal cord, whether formed late or early in the disease, must have excited irritation; but it is likely that the cerebral congestion was only one of its effects.

When the patient is young and plethoric, or in a pregnant state, the removal of a little blood from the arm may be beneficial; but as a general rule the Doctor disapproves of sanguineous depletion in this disease, except in small quantity. The application of leeches or glasses to the temples, nape or spine is not unfrequently required; but even local depletion must be regarded more as a preventive of dangerous congestions, than as calculated to remove the specific symptoms. Where the chorea is uncomplicated with rheumatism, or any other more purely inflammatory affection, leeches and the lancet will be better borne and more required; but the experience of our author is much more favourable to tonic medicines, accompanied by moderate purging. The compound scammony powder or calomel and scammony he recommends for children, aloes and myrrh for patients of more advanced age. He has sometimes given calomel in five-grain doses for three or four nights in succession, following it up with a purgative each morning; and in obstinate cases he has applied issues, setons and blisters to the nape; but—

"Tonic remedies are those on which the chief reliance is to be placed, though they always require to be combined with purgatives. It will often be necessary to persist in the use of tonics for a long time, gradually increasing the dose. The mineral tonics are most efficacious; and of these the sulphate of zinc cautiously increased, and the subcarbonate of iron, are least liable to do harm.—I generally begin with a single grain of the sulphate of zinc, and increase it every second or third day, one grain at a time; in which way a child of ten years of age, will often take ten or twelve grains in the form of pills, three times a-day, without suffering the least inconvenience. The zinc has sometimes proved effectual when the iron has not; and, on the contrary, the subcarbonate of iron will sometimes succeed when the zinc has failed; but it often requires to be increased to such an extent, that the powder becomes very disgusting to the patient, simply from its bulk. I have given it in doses of half an ounce and I believe larger doses have been given. In some cases, more particularly those which are accompanied with amenorrhœa, the compound steel mixture, repeated as frequently as every fourth hour, is an efficacious mode of administering iron, and is less unpleasant than the powder of the subcarbonate. I have occasionally given with advantage the tincture of the muriate of iron. I have known instances in which arsenic has been successfully administered; but I object to this remedy, where others less hazardous will act as well. On the same ground I should object to the use of the nitrate of silver, which has often permanently changed the colour of the skin, though I have seen it administered by others with utility in chorea; the sulphate of copper is another remedy, which I think objectionable on account of the irritation it often produces in the stomach." 471.

The 231st case is a good illustration of the effects of this practice: C. L. aged 16, of slender form, who had never menstruated, was affected with well-marked and rather severe symptoms of chorea, which some ascribed to fright. Colocynth and calomel, aloes and myrrh, and two-grain doses of the sulphate of zinc every eight hours were the medicines at first employed, and when she came under the author's care she was entirely confined to bed in a constant state of convulsive action during the day, throwing herself from one side of the bed to the other, unable to articulate, and swallowing with

the greatest difficulty." The zinc was increased to five grains every six hours, five grains of calomel were given at night, and castor oil in the morning. Still, however, the disease advanced, and Griffith's tonic mixture was substituted in ounce-doses every two hours for the zinc, five grains of the hyoscyamus extract were ordered as a night-pill, and ten ozs. of port were given. In less than a week her improvement was quite visible, and in about a month she was "quite free from all symptoms." This patient had a recurrence of her disease five months after, but she was again cured by the same remedies.

The cold shower-bath adds much to the efficacy of internal tonics, and may be employed on alternate mornings with the purgative medicines. The spasmody movements are sometimes so severe, however, as to render its application difficult, when cold affusion may be substituted with advantage. In the fatal case, which has been extracted, its good effects were obvious and considerable, and the 229th history affords another instance of its value. Where there is neither fever nor inflammatory symptom the diet should be generous, and even a little wine prudently administered has been followed by marked improvement in cases of a very unpromising description. Anodynes likewise tend to allay the excessive irritability by which this disease is characterized, and hyoscyamus joined to camphor is the preparation, which the Doctor has found most serviceable for this purpose. Under the most judicious management, however, chorea is a disease which can seldom be prevented from re-appearing in some degree at some future period of life, although banished for a time. The mobile and susceptible state of the nervous system, on which it either depends, or to which it gives origin, leaves the patient in great danger of relapse, and no preventive plan yet devised has been found equal, either in this affection or that last described—hysteria—to counteract this predisposition. In several cases detailed in the work before us the patient had either suffered from the disease before coming under the Doctor's care, or was subject to it afterwards; and in the 224th history the child was treated for the same symptoms at three different periods, having suffered an attack each year for three successive seasons.

Neuralgia appears in various forms, and attacks different parts. In one case it appears as sciatica, and apes with close resemblance the character of acute rheumatism. In another it wears the symptoms of tic douloureux, and presents a less inflammatory, but much more painful character. In a third it appears as an intermittent headache, attacking however only one-half of the head, and therefore denominated hemicrania; and in a fourth it has been seen to simulate angina pectoris, cardialgia and asthma. That the nervous system is the seat of this distemper is most undeniable, and that the nerves affected are either inflamed or highly irritated is evident from the pain experienced along the track of their position, when pressure or any other external irritant is applied—sciatica has been by many regarded rather of a rheumatic than neuralgic nature, notwithstanding; but, however frequently these affections may be associated with, or resemble each other, they certainly can not only exist apart, but the one is often little benefited by the remedies most commonly and most usefully employed in combating the other. Cupping along the seat of the sciatic nerve, followed by a belladonna plaster, and aided by a pill composed of opium, tartar-emetic and

calomel, given every six hours and worked off by an occasional aperient, is the treatment recommended in the present instance. Colchicum, which is so beneficial in rheumatism, does not seem to exert much influence upon it; neither do the chalybeates, which have proved so successful in other forms of neuralgia: yet after the measures above proposed have dissipated the phlogistic symptoms, and have reduced the disease to a chronic state, the rust of iron has been advantageously employed.

In tic dououreux there are fewer indications of increased action, but much more intense pain. According to Sir H. Halford osseous disease is very generally the irritating cause; but the cases are innumerable, in which tic can be traced to other sources of excitement. Were spiculae of bone, or osseous irregularities the general exciting cause, how does the President account for the present very successful treatment of this affection with the rust of iron? This substance will scarcely be supposed capable of shaving off either irregular growths, or carious sphincters, yet in a few days, nay in as few hours, has this medicine been found capable of dissipating attacks, which have endured for weeks! And how does it happen that the neuralgic symptoms are not as constant as the exciting cause? If the nervous irritation originate in osseous disease, the irritation should be as unintermittent as the irritating agent; whereas it is highly periodical in its continuance, and is most generally more or less connected with chylopoietic derangement. Indeed, we think it has been tolerably well proven, that this form of neuralgia, at least, is more a disease of function than of structure, and it is to this happy circumstance that we are to ascribe so much of its manageableness under tonic and alterative remedies. "It will, perhaps, be found," in the Doctor's opinion, "that as much depends on the character of the nerves irritated, as on the nature of the irritating causes, the irritation of course acting in such cases upon nerves of sensation, more than on nerves of voluntary or involuntary motion." In the following case, at least, the President's theory is illustrated.

(249.) A middle aged woman, who was thin and whose countenance was strongly marked by the effects of long suffering, was admitted into hospital for an extremely acute pain on the left side of her face, which *was seldom completely removed*, but became more severe in paroxysms. Every remedy, which had been tried, proved unavailing and she died. There was more than the usual quantity of water in the ventricles and upon the surface of the brain, which was rather soft and presented a slight mottled appearance in its medullary matter. The dura mater, immediately under the anterior part of the left middle lobe, was elevated by fungoid tumours, which collectively were equal in size to a pigeon's egg. The surface of the lobe corresponding with this tumour was depressed, softened and slightly adhered to the elevated portion of the dura mater. The bone beneath the tumour was carious; the mucous lining of the left nasal cavities was diseased; there was a soft pedunculated polypus of the shape and size of a raisin attached between the turbinated bones; but that part of the portio dura, which had been laid bare in the removal of the diseased parts, exhibited no marked appearance. With the exception of old pleural adhesions, and a tuberculo-hepatized state of the right lung, there was no disease of any consequence in any other part of the body. The *continuous* character of the neuralgic pains in this in-

stance, considered in relation to the nature of the exciting cause, will have some influence upon a remark on this subject already made.

Mercury, either internally or externally employed with opium, so as to produce salivation, has more than once cured this disease; large doses of bark, repeated every hour, have afforded great relief; and the external application of tar to the parts pained has sometimes been successful; but the remedies most to be depended on are rust of iron and the arsenical solution given in large and frequent doses, at the same time preventing the bowels from falling into an unnatural state. Mr. Hutchison's merit, in drawing the attention of the faculty to the value of the subcarbonate of iron in the treatment of neuralgia, has now been very generally admitted; and, were it not for the grossly open and extensive plagiarisms which his work on this subject betrays, we could cordially acknowledge it in its fullest extent. But notwithstanding that it seems hitherto to have escaped detection, it should not be concealed that entire pages of the volume here alluded to are taken *verbatim et literatim*—sentiment and language, from an author—Fothergill—much Mr. Hutchison's superior in reputation, but who should not have been thus pillaged even for *the sake of science* because he was no longer among us to protect his property. Mr. Hutchison was, no doubt, quite capable of writing his own sentiments, as well as his own language; but since he either had not time, or would not take the trouble of doing so, both equity and honor claimed an acknowledgement of the fountain out of which he drew.

Division of the diseased nerve has been advised and practised, but whether from the nerve having been imperfectly divided, having afterwards united, or having been irritated by a cause which lay beyond the operator's reach, the knife has seldom effected a complete and lasting cure. If chronic disease of the neurilema, or substance of the nerve itself, be the cause of the neuralgic symptoms, unless the division of the diseased nerve take place between the diseased portion and the sensorium, the operation appears to us to be wholly useless. For, if a part of the diseased nerve be still left in communication with the brain, it matters little how much of it may have been removed by the operation, morbid impressions will still continue to be transmitted to the sensorium, and the original disease will still remain. As it is, therefore, frequently a mere point of conjecture, whether the excited nerve be irritated from sympathy or by an idiopathic cause, and as it is still more frequently conjectural to what extent the disease obtains, when it is the texture of the nerve itself which is implicated, it is too evident that an operation, so vaguely indicated, can seldom be productive of permanent good.

Hemicrania is so often connected with hysterical habits, that by some it has been supposed to be as nearly allied to hysteria as neuralgia, and there is no doubt but that it is much more obedient to medicine than any other form of this painful and obstinate disease. It is not unfrequent during lactation, and pregnancy seems favourable to its approach. It seldom wears a continued form, and its periodicity has suggested some similarity of character between it and genuine intermittent. However that may be, it is certain that bark, iron, Fowler's solution of arsenic, and such other remedies as are most successful in the treatment of ague, are equally efficacious here.

(251.) A short stout young woman was attacked with inflammation of

the right eye, for which she was cupped and leeched, and when it was getting better she became suddenly seized with a severe pain, which shot from the right orbit across to the occiput of the same side, for which cupping, leeching and much medicine had been ineffectually employed. When first seen by the Doctor this hemicranial pain was attended by a throbbing sensation anteriorly, and had an exquisitely tender circumscribed spot about the size of half a crown, at each extremity of the affected part. The pupils were dilated, but the pulse, tongue and skin were natural ; the bowels were open, but the catamenia were irregular. Five drops of Fowler's solution were given in cascarilla infusion three times daily, and a pill composed of mercury, colocynth and galbanum was ordered every alternate night. For nine days thereafter no improvement occurred ; indeed her headache was rather worse, and it was complicated with vomiting, numbness of the limbs and giddiness : but at this period a gradual diminution began to take place in her suffering, and in less than a fortnight she left the hospital cured.

Mr. Teale, in his interesting little work on neuralgia, which we favourably noticed at another time, has described a great many varieties of this disease, in addition to those noticed by the Doctor, which close examination discovered the cause of in a tender state of the vertebral column, or spinal cord. Anomalous pain about the scrobiculus cordis, along the short ribs, over the region of the spleen and liver, and even in the situation of the heart, closely simulating angina pectoris, have been carefully and in our estimation clearly traced to some inflammatory derangement either in the vertebral column, or its contents. These he found were generally removable by the application of leeches and antiphlogistic remedies, local and general. Whether our author have met with any forms of this disease depending on the same cause, he does not say, but in a field of observation so extensive as that which he enjoys one might presume that such cases were not unlikely to occur, and it were desirable to learn how far his experience corresponds with Teale's views.

After herpes zoster it sometimes happens, that acute neuralgic pains are experienced in the integuments formerly diseased ; and unless the practitioner examine with some care the entire history of the case, he may be inadvertently betrayed into a very erroneous conception of its real character. In the 247th history, the patient's complaint had been mistaken "by an experienced practitioner" for "an internal malignant disease," for which a seton had been inserted into the left side of the chest. In the course of some weeks, however, the pains gradually yielded to opiates. In the 248th case the herpetic eruption died away in its usual course, but the pains which remained were severe, and quite unappeasable by opiates. A scruple of the subcarbonate of iron was ordered three times daily, increasing the dose as the cure proceeded ; but—

"The relief was so rapid, that a very few days served to remove the pain entirely.

This is the only case in which I have employed this remedy, and I therefore will not lay great stress upon it ; but if the utility of this mode of treatment should be confirmed by future experience, it will not only enable us to relieve a painful disease some days or weeks before it would probably subside of its own accord, but the remedy also serves to throw some light on the neuralgic nature of the pain, and the peculiar connection of the original disease with some affection of the nerves." 503

Epilepsy has sometimes been seen at the earliest age, as well as at the decline of life, but the most frequent periods of its occurrence are between seven and eight during the second dentition, and from fourteen to sixteen at the age of puberty. These two periods are equally critical and severe upon the constitution. Every weak and unprotected organ is tried to the utmost. Every function is put upon the test. Diseases, which had hitherto lain hid and undeveloped in their own seminal rudiments, are at those periods of trial called forth into activity; and predispositions, which before had been of themselves unable to awake those morbid principles which had been quietly awaiting their proper birth-time, are then fostered into operation.

The hereditary nature of epilepsy is now no longer a question. It can be traced with ease from parent to child, and it is by no means clear that, like hysteria and chorea, it may not be propagated by sympathy. Sometimes, but rarely, it occurs that one well-formed paroxysm is the only manifestation which it makes during an entire life; more frequently many years of interval separate one paroxysm from another; but generally its periods of re-appearance are short and uncertain. It has been known by the Doctor to recur no fewer than thirty times in the short period of twenty-four hours. Its period of return is sometimes quite fixed, but usually it is most irregular. In one instance it approaches during day, while the night is much more favourable for its approach in general. This capriciousness can sometimes be accounted for, by referring to the nature of the exciting cause. If epilepsy appear monthly in a female, the uterine functions may be fairly considered to have some connexion with its lunar periodicity; if it occur at night in preference to day, the cerebral congestion which attends a state of sleep may be recognised as a reason; and if it appear at unmeasured and uncertain intervals, some casual excess or accidental irregularity may be often found to account for it. There is more difficulty in discovering the cause of the multifarious modes, by which it approaches, and of the different phenomena, by which it is attended. In one patient the paroxysm is introduced by a long and intelligible train of precursory symptoms, while in another the fit occurs instantaneously, without the faintest premonition. Some are depressed by melancholy, while others are unusually cheerful before the occurrence of the fit. After a momentary absence of mind it occurs, without noise, convulsion, or any more outward sign than a vacant and inexpressive stare. Sometimes this fugitive mental annihilation, or rather absence, is complicated with partial convulsions, affecting more severely the face and hands. And in other instances the whole body is as violently excited as the mental functions are palsied and inactive. In the 252d case the symptoms wore the mildest form.

A large robust man, aged 36, with an ample forehead, was seized while at work with numbness of the left hand, which, passing up the arm, affected the left cheek, and the left half of the tongue to such a degree as greatly to impede his speech. This first attack continued for about twenty minutes, and on going off left some headache behind, which however did not prevent him from pursuing his work. Six weeks afterwards a similar attack occurred, this was followed by several others, and between the paroxysms he latterly felt so weak and nervous, that for seven weeks before he was placed under the Doctor's care, he had been obliged to give up his ordinary business. The feet and legs were ultimately affected as well as the hands and arms, but

beyond transient vertigo the mind never betrayed any indication of disturbance.

The 264th history is a good illustration of epilepsy in the next, or second grade of severity. A boy, aged 13, received a severe cut in the forehead, which healed in a week and had never confined him to the house. Four years afterwards he was frequently wont to carry heavy loads upon his head, and in about a month subsequently he was suddenly seized with spasms of his hands and legs, which lasted for a couple of minutes, but were unaccompanied by any loss of consciousness. These spasms at first occurred once a week, but they gradually increased both in number and severity until they appeared once or twice daily, and continued several minutes. The hands and feet were enspasmed, then followed an uncontrollable jactitation, then the complete fit; and it was only in the middle of the paroxysm that the patient became wholly unconscious of external objects. The attack was sometimes preceded, sometimes followed by headache. It never occurred during sleep, nor in bed, and he always ascribed it to exertion. The nape was blistered, the bowels were kept gently open, and calomel was given until his gums grew tender, but the disease pursued its course without alleviation. The sulphate of zinc was then given, and gradually increased until four grains were exhibited every three hours; under the action of which he recovered. The 259th history may be considered a severe case, and in the 257th epilepsy is manifested in its most aggravated form.

A washerwoman, aged 40, who had borne a child twelve years before her admission into hospital, since which she had never been regular, was attacked with epilepsy, after suffering severely from headache for a considerable period previously. The right temple had been always referred to as the seat of pain during these attacks of headache. She was bled and cupped, but no obvious relief followed, a second paroxysm having occurred, which reduced her to a state of complete blindness with dilated pupils. At first sensation remained unimpaired, her dejections were passed with consciousness, and she answered questions well; yet she was sometimes found to wander a little, she slept much but without stertor, and ultimately she articulated badly, her conversation became incoherent, her sensibility obtunded, her strength oppressed, and she died in less than a month after the supervention of the first paroxysm.

A carpenter, aged 33, was seized with his first fit of epilepsy, while engaged in talk with another man. He had frequently complained of nausea, giddiness and a peculiar sense of sinking at the pit of the stomach; but he never acknowledged headache, nor had he ever vomited. He was brought to the hospital in a state of insensibility, but without any detectable symptoms of paralysis. He was bled, leeched and purged. On the following morning he was convulsed for the first time, and after that the convulsions returned frequently in a very severe form. When seen by the author "he lay tranquil; respiration 25; pulse 64; skin moderate." At times he gave a kind of jerk in his elbow or arm, particularly on the right side: he had frequently a violent movement of all his limbs, such as required four persons to hold him. Pupils contracted and immovable to light; he never opened his eyes willingly; his appearance was pallid and sunk. His head being shaved had cold applied to it, and a cathartic enema was given. Next day—

"He remained much in the same way, lying in general still and tranquil, and
No. XXXII. Z

when roused seeming sometimes to know his wife, but was unable to speak, and scarcely able to swallow, occasionally crying out violently till four o'clock in the morning, when he became very violent, crying out, and throwing himself about in bed, requiring several persons to hold him still: he afterwards became tranquil, but apparently more drowsy; he once or twice retched a little, but vomited nothing; his bowels open freely; all the evacuations were passed in bed.

I saw him at eleven o'clock. He was lying as in a deep tranquil sleep, on his back, looking pallid. Respiration 24: pulse 80, soft; skin soft; hands and feet rather too cool. I stood by his side some minutes, and he never moved. When I felt his pulse it seemed to rouse him, as he soon began to move about in a restless manner; then cried out very loud, threw himself about, moving all his limbs, and lying on his side with his legs drawn up.—When his wife called him several times by his name, he said in a loud voice, ‘Well!’—but this was the only word we could obtain. His pupils were more dilated than yesterday, and sluggish. On the whole, the powers of life seemed reduced, and he was more comatose.

Admoveatur Emplast. Cantharidis inter scapulas, et Cataplasmi. Sinapis pendibus.

24th. After the visit yesterday he seemed on the whole more composed and inclined to sleep. About four o'clock this morning, and again at five o'clock, he had most severe fits, described as quite of an epileptic character; his face was much convulsed, of a purple colour; and foam and blood passed from the mouth; at ten o'clock to-day he had another similar attack.—He appears better; lies frequently with his eyes open; and has several times so expressed himself, as to leave no doubt that he understood questions: he has this morning twice intimated, without speaking, his wish, to pass urine, and that passed is loaded with pink sediment. Pulse 80, rather weak, and not so strong as the beating of the heart at the scrobiculus cordis might lead us to expect. Respiration 20: pupils contract and dilate, though slowly, by the light of the candle: he moves every part as yesterday, but more naturally, and yawns frequently like one waking from sleep.

25th. His head had been kept quite cool: the blister has risen very well on his shoulders. He has been tranquil almost all night, and has latterly become very sensible, so that he answers questions distinctly, though slowly: he says he has scarcely any pain in his head; but his tongue is much swollen, and seems bitten at the edges: bowels not opened. Pulse 80, weaker: respiration 20. He has eaten a good deal of arrow-root. His manner is still quite dull, though he opens his eyes, and has been awake for several hours.

He did not sleep from five o'clock on Monday morning May 25th, till Wednesday the 27th at four o'clock; but became towards the evening of the 25th, after I had seen him, raving and delirious, so as to run about the whole neighbourhood half-naked.

On Tuesday the 26th he was taken to the workhouse, where he remained quite deranged, occasionally requiring restraint, till the Sunday week following, when he became sensible almost suddenly, and made anxious inquiries where he was, having known nothing of his removal from home, and retaining no recollection of anything which had happened.

August 2nd. He has been for some weeks able to return to his work, but has almost constantly experienced head-ache, particularly over the forehead, and several times in the day is affected with a slight dizziness and cloud before his eyes, with loss of memory and absence of mind, so that he is obliged for some moments to cease from his work: he sometimes talks in an unconnected manner; his countenance is pale; he has not the slightest paralysis of any part, and has had no return of a decided fit: he complains much of pain at the pit of the stomach and nausea.

I ordered him to rub the ointment of the tartrate of antimony on his neck, and regulated his bowels; but I shortly afterwards lost sight of him.” 525.

But, however this disease may be thus diversified both in its premonitory and attendant symptoms, the period of its duration is in all cases short, being seldom above thirty, and generally only a few minutes in duration. After the fit has passed the patient usually falls into a deep sleep, approaching to coma, from which he awakes unconscious of every thing which occurred; but he is often afflicted for days with severe headache, sometimes temporary palsy or delirium follows, and in some cases a death-like sopor succeeds, in which the patient lies immersed as in a fit of apoplexy, for days or even weeks. The mind invariably suffers more or less after repeated attacks of this malady, and it is by no means uncommon to be able to trace many cases of idiotism and insanity to violent and repeated paroxysms.

We as yet know but extremely little of the proximate or even the remote cause of epilepsy. That its seat is especially in the nervous system there can be no dispute, but so is that of hysteria, neuralgia and chorea also; yet these several diseases are very distinct and distinguishable from epilepsy. How far this dissimilarity arises from the nature of the exciting cause, or from the peculiarities of the excited organ, has not been ascertained. In almost all the cases recorded in these *Reports*, and they amount to 22 in number, cerebral congestion was tolerably evident upon dissection; but that congestion evidently arose from very different causes. In no fewer than eleven cases either the skull-cap or membranes of the brain, or brain itself were in a morbid state. In seven of these the cranium was more or less diseased. Thus in the 258th case there was an excessive bony deposit over the sagittal suture; in the 259th the calvarium generally was "at least three times the natural thickness, and the frontal bones about their centres encroached much on the cavity for the brain;" in the 260th the skull was very thick and irregular, in addition to a diseased state of the arachnoid, and portions of the cineritious substance; in the 261st the skull was at least half as thick again as usual and very heavy, and the kidneys were pale and scabrous; in the 263d there was, as in the 258th case, an excessive bony ridge along the course of the sagittal and also of the coronal sutures; in the 265th case the cranium was thick, externally irregular as though embossed, and internally presenting two convex prominences, two inches long and one inch wide, which produced corresponding depressions on the anterior and middle lobe of each hemisphere of the brain; and in the 266th case the skull-cap had been very seriously injured by a fall; since which the patient had been subject to epilepsy. In the 265th and 269th cases there was a fungoid tumour attached to the dura mater; and in the 270th the longitudinal sinus was obstructed by an exuberant growth of glandular structure. The 272d case depended on a deficient action of the uterus; and the 273d arose from abdominal irritation.

"The tangible source of irritation is often within the brain itself, or its membranes, or its bony parietes; at other times we are unable to trace any other appearances than such as would mark a degree of congestion in that organ. Sometimes we infer from the symptoms, or deduce from appearances after death, that the attack has depended upon some distant source of irritation, as the uterus, or the intestines; and there is still so great a similarity between those attacks produced by distant irritation, which leave scarcely a trace upon the brain itself, and those which depend immediately on cerebral disease, that we must suppose that the state to which the organ is brought, in order to produce the attack, is nearly the same in both. It is probable that there is an ori-

ginal formation of the brain, which renders one individual more liable than another to the irritation producing epilepsy ; that in such brains, comparatively slight irritations, and such as would produce little disturbance under ordinary circumstances and a more healthy original organization, give rise to the epileptic attack ; but that there are sources of irritation so overwhelming that scarcely any brain can withstand them ; such, for instance, as important changes in the skull or in the brain itself and its membranes ; and when once that irritation has been excited by any cause whatever, the brain becomes more liable to its renewal ; and I believe that almost always, during the epileptic paroxysm, either as a cause or an effect, sanguineous congestion takes place within the brain.

As far as I have been able to infer from my own observation, I should say that the organic causes of epilepsy, connected immediately with the brain, are more frequently such as affect its surface, than such as are deep seated in its substance. Thus we find that morbid growth, taking place in the skull, showing itself by a thickened heavy state of the bone, or by a roughened surface either internally or externally, or a remarkable prominence in the natural projections at the base, is often associated with epilepsy. Slow changes, producing a thickened condition of the membranes, will not unfrequently be found attendant upon epileptic attacks. Tumours pressing on the surface, or amalgamated with the cineritious substance, will also be found in cases of epilepsy : and these observations connect themselves in some way with the hints thrown out at page 46 and 381 respecting the apparent dependence of spasmodic action, in many cases, upon injury done to the cineritious substance. It is an idea entertained by Dr. Foville, that the cineritious is the more active part of the brain generally, with regard to all its functions ; and that the medullary part is more particularly employed in the conveyance of the motions and sensations, or whatever else may be acted upon or produced in the cineritious part. And supposing for a moment this to be the case, we might expect that lesion of the cineritious substance would produce disordered action in that part ; and that such action might be transferred to the distant parts of the body, producing disordered and involuntary motions : whereas, if the great injury were done in the substance of the brain, the means of communication with the active part being cut off, paralysis might result, more or less mingled with convulsion, in proportion as the cineritious substance is more or less involved." 515.

Epilepsy is occasionally accompanied with apoplectic, sometimes with paralytic symptoms.

(253.) J. C., aged 59, was much depressed in mind by misfortune, and became affected with headache, giddiness, and loss of appetite, which gradually increased, until on entering his house one day after severe fatigue he fell down senseless, out of which he recovered by having a little spirit administered to him. Next day he was bled and purged, and felt much better in consequence ; but in less than a week afterwards his disorder returned, for which he was again bled, purged and had cold applied to the head with the same effect. Two days after, however, a third fit occurred of a more violent description, which rendered him almost completely unconscious, and which was followed by several others. He was again bled and had a blister applied to the nape, but he did not rally as before, and he died without having any fixed paralysis. The dura mater was slightly vascular, but the cerebral substance was "more remarkably perforated by vessels than I almost ever before saw"—especially "in the upper part of the hemispheres, and most of all on the left side. The cerebellum was in the same state and more particularly on the left side."

From the obvious apoplectic character of this case of epilepsy the practitioner was induced to employ his lancet, and certainly twice with a good effect; but the Doctor believes both from his experience in similar instances and from the epileptic features of this case having been the most predominant, that local depletion, in conjunction with the other remedies employed, and tonics might have been productive of better consequences; and this opinion is countenanced by the dissection of the brain, in which there were more vestiges of prior than present congestion; for, speaking of the divided vessels above referred to, it is said that they "did not appear as if they contained any great quantity of fluid blood—the longitudinal sinus scarcely contained any blood; the smaller sinuses a small quantity in a fluid state—the choroid plexuses were remarkably pale; and the large veins, which run along them, contained no blood, looking like white worms or threads."

(271.) A stout well-made young soldier, after being on guard, was suddenly seized with a fit of epilepsy, in which he was not convulsed, but foamed at the mouth and became black in the face. This fit was followed by many of the same character, for which he was occasionally bled and purged; but he never acknowledged the existence of pain in his head, or indeed in any other part of his body. Eighteen months after he first took ill; his right leg and loins became numb and motionless, and in 24 hours after his left leg was similarly affected. His urine and stools were voided unconsciously, and these paraplegic symptoms continued for eight months in spite of cupping, setons, issues and other remedies. Power gradually returned to the left leg, and then sensation; but the faculty of motion alone was restored to his right extremity. In this state he was dismissed from Chatham Hospital, and after having been frequently cupped in St. Thomas's, he ultimately was admitted into Guy's. His fits at this time were less frequent than formerly, and he had a brief notice before the rectum or bladder discharged their contents. His left leg moved very imperfectly, but preserved its sensibility unimpaired; while the right enjoyed full power of motion, but might be prickled without feeling, and "if the needle were pushed in deeply a slight convulsive action only of some muscles occurred, not at all like a retraction of the limb from pain."

In this case the Doctor suspected that some organic change was taking place within the cranium, but the deterioration of sensibility in one part and of motive power in another renders it difficult to fix its precise seat, or to predicate its exact nature. Both legs were similarly palsied in consequence of severe epileptic fits excited by tapeworm, in the 273d case; but the use of the left returned after a few days; and in both the 261st and 262d cases partial palsy was intermingled with the epileptic symptoms.

As in all other complaints there can be no doubt but that also in epilepsy the cure will materially depend, both for its means and probabilities, upon the nature of the exciting cause. If it arise from mere functional derangement, whether of the brain itself or of some distant organ with which it sympathises, medicine can promise more than when structural disease of either the cerebral tissue, investing membranes, or osseous covering is the exciting agent. As has been already observed, the vessels of the brain are generally in a congested state, and as this congestion, whether it be sympathetic or immediate, is a morbid and morbid condition, it is indispensable to ply it

with the appropriate remedies carefully employed. For this purpose cupping on the nape, setons, issues and perpetual blisters are usually had recourse to; and, although our author disapproves of free depletion as a general measure, he speaks in terms of approbation of the local removal of blood in moderate quantities, when evident signs of congestion are discoverable. Dr. Prichard recommends large issues along the vertex. The Doctor has not had any experience of their effects; but the tartar emetic ointment he advises to be rubbed upon the scalp or neck, until an abundant eruption is produced. A slight mercurial action has occasionally been followed by relief, as have also brisk mercurial purgatives; all the animal functions should be carefully attended to, as their derangement has been found strongly to aggravate and not unseldom wholly to induce the epileptic paroxysm. With this view the mineral tonics are the most promising, and of these the sulphate of zinc, the different forms of iron, the arsenical solution, and the nitrate of silver are the most powerful. The shower bath is often a strong auxiliary, but where symptoms of much cerebral congestion are present, it must be employed with caution. In hysterical epilepsy the entire class of diffusible stimuli have been tried with advantage.

The Doctor has been frequently led to observe that where the disease is mainly or wholly dependent on cerebral mischief, the first symptoms of attack manifest themselves in some distant parts of the body; hence the great importance of attending in all cases of epilepsy, but more especially in such, to deranged although they may be distant functions. In the two following histories it will be seen that the alimentary canal was in one, and the uterus in the other seriously disordered, and how attention to these organs overcame the nervous symptoms which they had induced.

(272.) A young female, who had never menstruated, but who often complained of pains in her loins and lower region of her abdomen, became subject to fainting fits, in one of which she struck her head rather severely against a stool. A fortnight after this accident unequivocal epileptic symptoms appeared, complicated however with globus hystericus, and occasional sobbing. A good drastic purge brought away several unhealthy stools, after which headache supervened; for which ten ounces of blood were cupped from the nape, a stimulating foot-bath was ordered, and aloetic wine with camphor mixture were taken every eight hours. On the 26th she felt better, and her fits had less of an epileptic character; on the 27th she had one fit only, but not having had any stool some castor oil was given, and as she complained of severe headache, giddiness and sickness of stomach, a draught of the tinct. helleb. nig., aq. puleg., and syrup. aurant. was prescribed twice daily. By the 1st of December the fits had disappeared, but she occasionally felt faint, and shortly afterwards by persevering in the same medicines she got quite well.

(273.) A young man, who had been for several years subject to tænia, against which he was in the habit of taking turpentine, having experienced severe intestinal pain, had recourse to his usual remedy; but for five days no effects followed, strangury occurred, and he experienced several fits of epilepsy, under which he lost the power of both his lower extremities. His fits were frequent, and on the day of his admission he had suffered six. The

turpentine was persevered in with the effect of bringing away large portions of tape worm; for about a week five grains of blue pill were taken every night, but they were suspended on his mouth becoming sore; balsam of Peru was afterwards ordered, and when he left the wards he remained free from fits, and was slowly regaining the use of his extremities.

Convulsions. What are usually called convulsions in children the Doctor regards as of an epileptic character, while he admits that they may appear in the very severest form, without ultimately establishing the habitual and regular disease. These convulsions arise from as many and as varied causes as epilepsy—such as fluids effused upon the brain, vascular turgescence, tumours attached to the membranes, or imbedded within the substance of the brain, the excitement occasioned by such febrile diseases as small pox or scarlatina, internal irritants, as dentition or worms, and external ones as injuries or burns.

"These exciting causes of the convulsions of children will be perceived to resemble very much the usual exciting causes of epilepsy,—allowance being made for the irritability of the infant's frame; nor are there any circumstances in the progress of the attack which enable us to draw a distinct line between the two conditions, except the very frequent occurrence of convulsions in children, without leaving either a tendency to return in after life, or any trace of the attack when it has passed away. I have seen children for six or eight hours convulsed and senseless from abdominal irritation recover completely in a few hours, and grow up to manhood without a symptom of disease. I have known a child from the time it first began to cut its teeth, suffering unceasing convulsions, despaired of from day to day, and from week to week; yet, after the lapse of several months, recover completely on the appearance of its molar teeth. It does, however, on the other hand, occasionally happen that repeated convulsions impair the faculties, or are followed by a tendency to epileptic seizures during the remainder of life, or leave traces of paralytic infirmity of a more or less durable character. In such cases, it is probable that slight lesions have been produced in the brain during the excessive congestion of the convulsive paroxysm, or that the vessels have been so distended as to be unable to recover their healthy tone and condition." 554.

Tetanus. Whether we consider the apparent slightness of its exciting cause, in contrast with the frightful severity of its attendant symptoms; or the almost certain death to which it leads its victim, with the energetic efforts which have been made to vanquish it, there are few diseases more truly formidable than tetanus. Were tetanus an exclusive consequence of a wounded nerve, or were every wounded nerve to be succeeded by tetanic symptoms, the etiology of this disease would be less clouded; but when the largest and most important nerves may be irritated, incised and severed without inducing tetanus; when tetanus may appear not when the nerve is wounded, but years after it has healed; and when tetanus may occur without any known cause, and after baffling every remedial effort destroy life without leaving one post-obit trace of either its cause, seat, or character—we are doomed to struggle with an enemy of so subtle a nature, as to make its attack from a quarter unperceived, with a ferocity too often superior to control, without giving the faintest premonition, or furnishing the vanquished with any autopsy evidence of whence it came, or how it killed.

The Doctor describes the approach, progress and result of this disease in the following accurate and graphic style:—

"At first the patient suffers a slight feeling of indisposition; he thinks he has taken cold, and perhaps he has; the muscles of his neck grow stiff; he feels an obstruction in swallowing; he fancies that his throat is sore; he finds it difficult to open his jaw, which is often first perceived when the physician wishes to see his tongue; the muscles of his face contract; his brow becomes wrinkled; his eyes are drawn by the action of the orbicularis; and the corners of his mouth are pulled down, particularly in the effort of opening his mouth. He now feels other muscular spasms; he is drawn for a moment backwards; the abdomen becomes rigid; the pulse is often hurried and irregular; the respiration is embarrassed; he complains of pain at the pit of his stomach, increased to agony on each recurrence of the spasms; he is bathed in perspiration; he is marked with torment; the spasms act upon him with increased violence; he is worn out with suffering, he becomes delirious, and he dies: or a more sudden termination is granted to his miseries; the disease fixes on the muscles of respiration, and brings on instantaneous death.—All this may be the work of four and twenty hours;—it may be the work of as many days. Sometimes, on the contrary, the disease remains mild for several days, abates, and passes off." 555.

When the attack has been occasioned by external injury, the nerves of the violated texture are generally found more or less vascular and reddened; but when it has appeared without any known cause, it not unfrequently happens that neither the brain, nor spinal cord betrays the least vestige of derangement. This is well seen in the history of the following case.

(276.) A boy, aged 15, got both his heels wounded by a circular saw, and his left humerus fractured, after which he became very irritable, took what he called a sore throat, and symptoms of trismus came on. His tongue was protruded with great difficulty, his neck was stiff and retracted, he complained much of a pain at the pit of his stomach, the muscles of his abdomen were hard, and his pulse was 127, wiry. A scruple of musk, a dram of æther, and five grains of the subcarbonate of ammonia were given in peppermint water every three hours, a sinapism was applied to the feet, and a stimulant enema was injected. The wounds were dressed with spirits of turpentine, and brandy and wine were given with his nourishment. Towards night he became more irritable, and a dram of laudanum was administered as an injection every quarter of an hour, until two ounces were consumed; but no alleviation was procured, and he died in forty hours after the first appearance of his disease. The dissection was conducted by Mr. B. Cooper and Mr. Key, but "no diseased appearances were discoverable." The brain, the cord, the ganglia, the sympathetic, the plexuses and all the nerves, which could be traced, were all equally and perfectly healthy. The lungs were somewhat congested, the large veins near the heart and the right auricle of this organ were distended by coagulated blood, the gall bladder was filled with bile, there were some small calculi near its orifice, and the small intestines were much contracted.

With curative indications so feebly developed, it is not marvellous if our treatment of tetanus should be empirical and its success uncertain. In the periodical publications of a single month within the last two years, says the Doctor, cases were brought forward by four different practitioners, which had been successfully treated by four different remedies—the subcarbonate

of iron, mercury, caustic potash to the spine, and general bleeding; and scarcely does a year pass, which does not boast of some new curative plan, or some new successful specific. The 275th case must be read with interest in reference to this point.

A youth, aged 15, was attacked with difficulty in opening his mouth and swallowing, whether from exposure to cold during his employment as a brick-maker, or from a cut received by a piece of glass on the thumb about six weeks previously, which had quite healed, was uncertain. A draught, composed of æther, decoction, and tincture of bark, and laudanum, was ordered every two hours, and a purging enema was administered. On the next day (31st July) there was no change. He perspired profusely, his temperature was 105°, his pulse 130, and he complained of painful spasm at the pit of the stomach, for which a blister was applied. 1st August. No power of voluntary motion except in arms; neck and back retracted, legs extended, and all his muscles were successively in spasmodic action. When raised from the bed to change the sheets he stood "stiff and erect, touching the ground only with his toes; his neck stretched to its utmost, and forming part of the curve into which his body was thrown backward; he was much oppressed; his breathing and articulation were difficult." 2d. No improvement, in consequence of which cold affusion was tried. Being placed in a tub, a large bucket of water, at the temperature of 60°, was thrown over his head, and repeated twice after considerable intervals. 3d. Each application of the water gave temporary relief, and both the pulse and temperature were slightly reduced by it; but he passed a noisy restless night, and abused the attendants because they would not repeat the bath. 4th. Four baths had been since given with transient benefit, but as the spasms were considered even more violent than formerly, and as the benefit derived from the affusion was very fleeting, it was again resolved upon to change the treatment and substitute tobacco injections. Half a drachm of the leaves of tobacco was accordingly infused for ten minutes in half a pint of boiling water, and formed into an injection. In ten minutes the pulse became 140 and irregular; in 20 slight nausea was produced and the pulse rose to 160; in 30 the nausea continued, but the pulse fell to 96; and in an hour the pulse stood at 100, and the nausea was going off. 5th. The glyster had been twice repeated, and during this day was again administered three times; but not finding that it had arrested the progress of the disease in the least, it was resolved not to harass the patient longer with the injections. One ounce of strong mercurial ointment, one drachm of opium, one of camphor, and one of oil were now made up into an ointment, of which one drachm was rubbed in every second hour; and five grains of calomel were given in the form of pill, and one drachm of laudanum every four hours. (6th.) Passed a better night, and thought himself more easy. (7th.) Passed a worse night, his back was bent backward, every muscle was stiff but not so painful, and he looked much worn by the disease. (8th.) Had a tolerable night, but although his mouth and throat were becoming sore, the countenance was dejected, the breathing short, the pulse rapid, and no one symptom was improved. Mercurial friction was, therefore, laid aside, and a scruple of musk with five grains of ammonia were given every two hours. (9th.) Bowels irritated, much pain of head, neck and abdominal muscles, back spasmodically bent every four or five minutes, mind very irritable, he drank much,

but refused to eat even jelly. As half an ounce of musk and one drachm of ammonia had been given without producing any good effect, these medicines were abandoned; and as he was evidently sinking, no further remedy was proposed, but as much nourishment was given as would be received. (10th.) Passed a restless night. Had taken an ounce and a half of port wine every hour, and had eaten some jelly and oysters. The pain in the back and spasms, however, continued, deglutition became still more difficult, during the day his intellect wandered for the first time, as evening approached he grew weaker and dyspnoea became excessive, and during the night he was delirious. (11th.) This morning the delirium continued, as the night advanced it increased, and shortly after six on the morning of the 12th he expired.

There were, thus, four distinct remedial systems made to bear upon this patient, and although the shortness of the period during which each was tried may render these experiments objectionable, the inefficacy of each was ascertained with tolerable certainty. The calomel and opium at first seemed to do good, but by the time that ninety grains of calomel, three ounces of mercurial ointment, and two ounces of laudanum had been employed, all the symptoms were worse, and the patient was evidently sinking. The cold dash gave relief, and quieted the patient's irritability both of mind and body more effectually than any other remedies; but still the spasms continued unabated, and the temporary respite, which followed the affusion, was invariably succeeded by symptoms of reaction as formidable as ever. The tobacco injections were obviously injurious, by exhausting the powers of life; neither the musk nor the ammonia, the æther or the bark gave the promise of any certain good; and, after making so many fruitless efforts to procure aid from medicine, it was at the last found impracticable to achieve more than sooth (with wine and cordials) the last moments of an existence which it was impossible to prolong.

General bleeding is reprobated as only calculated to increase irritability and diminish strength; leeches and other locally depleting agents are recommended, as having been applied with advantage; but our author has not been able to discover that vascular condition of the medulla oblongata, or spinal cord which has been witnessed by some. The blood, which the Doctor would remove in this affection, he would not abstract with the view of reducing the general powers or of weakening the general circulation; but to relieve the patient of that congestion, which is supposed by many and has been shown by some to exist about the column of the spinal cord. This local depletion he would accompany with other measures. Notwithstanding the very conflicting evidence of Currie and Morrison, he thinks favourably of cold affusion. It is reported to have cured cases both of the idiopathic and traumatic character, and in the history last given its operation, although merely palliative, was more soothing and conciliating than that of any of the other remedies employed. Strong opiates and tobacco injections he considers useless, if not injurious; but he speaks in terms of decided preference of the tonic stimulants. "I scarcely remember," he observes, "to have seen one patient recover to whom tonics, chiefly bark and generally stimulants as wine and ammonia, had not been pretty liberally administered." In the 274th case the efficacy of this tonic plan was fairly tested and answered favourably. One hundred and eighty leeches, no doubt, had been

applied to the spine, and some may ascribe to them considerable influence ; but the relief, which they gave, was only transient, and the Doctor fancies that little ground was gained until the tonic treatment had been fully established. It will be seen that the sulphate of zinc was at first given in two grains, but was afterwards increased until eight grains were ordered every six hours.

(274) A boy, aged 14, was bitten in the leg by a dog, a week after which he felt unwell ; after a few days more he experienced some stiffness in the jaw, pain in the chest and abdomen, and the wound, which had hitherto been doing well, became foul, and in the course of three weeks he was admitted into Guy's Hospital with decided tetanus. A pill, composed of one grain of calomel, one grain of opium and a quarter of a grain of tartar emetic, was ordered every four hours together with an aperient. On the 14th the pills were repeated four times daily, and a blister was applied to the wound. 15th. Symptoms of opisthotonus appearing 40 leeches were applied to the spine, the pills were continued, and the blister was dressed with cantharides ointment. 16th. Trismus more advanced, and abdomen more rigid. Twenty leeches to spine, pill continued, and a black draught given. 17th. 20 leeches again applied ; other medicines repeated. 18th. Appears better—20 leeches again ordered, pill continued twice daily, and two grains of the sulphate of zinc given every six hours. 19th. The black wash was applied to the wound, 20 leeches were applied to the spine, the zinc was continued in three grain doses, the pill was repeated at bedtime only, and two grains of the extract hyosc. were given every six hours. (24th.) Twenty leeches had been since applied, the zinc was increased to eight grain doses, and the pill was continued at night, but without the calomel. The patient sleeps well—abdomen nearly natural, mouth can be opened more easily, no pain any where. (Dec. 1st.) Sat up. (5th.) Convalescent. (7th.) The zinc was continued every eight hours. (8th.) Wound in the leg healed. (11th.) Left the hospital quite well.

Dr. Elliotson has been more than once successful with the carbonate of iron, and Dr. Bright's experience of the sulphate of zinc in chorea, neuralgia, hysteria and epilepsy leads him to conjecture that no general tonic may be found serviceable in tetanus, which these affections resemble in more respects than one.

"Hysteria, chorea, and epilepsy are all relieved, and in some cases cured, by tonics ; and the two former are frequently benefited by stimulants. Epilepsy and hysteria, and even chorea, occasionally approach for a short time very closely to tetanus in their symptoms ;—and why should we not seek the remedies for one, out of those most useful in another ? Similar analogies would lead us to pay the strictest attention to the condition of the bowels, and by procuring daily full evacuations, to satisfy ourselves that no accumulation either of the remains of alimentary matter or of vitiated secretions takes place ; but I cannot help considering the state of irritation which has often been kept up in the alimentary canal by drastic purging, as likely rather to prolong than relieve a disease in which the irritability of the system is so great.—When any local injury can be discovered capable of keeping up irritation, it is obviously a great point to remove it as quickly as possible, or the irritating action of the part should be changed ; and with this view, the practice recommended by applying blisters to the wound, as well as that of dressing it with mercurial ointment till a more healthy action is induced, appear amongst the most promising remedies." 557.

"I know of no remedies," he remarks, "which seem to go more completely hand in hand, in the cure of nervous irritation, than sulphate of zinc and carbonate of iron. Borne out, then, not only by the analogy of chorea, in which experience has been abundant and convincing, but by the apparent result of much more limited experience in the disease itself, we seem to have a clue at least to guide us to a treatment as rational as any which has hitherto been adopted." 563.

In the 258th case the surface of the anterior lobes of the brain was diseased, but the author is inclined to ascribe this appearance to some prior mischief; and in the 259th history an encysted abscess was discovered in the cerebral substance, which lay underneath that portion of the scull, which had received the blow. But as the appearance of the tetanic symptoms preceded the formation of this abscess, supposing the abscess to have been an effect of the blow, it may probably have increased the nervous disturbance, but could scarcely have exerted any more primitive or essential influence.

Hydrophobia. Many of the observations, with which our notice of tetanus has been introduced, are equally if not still more forcibly applicable to hydrophobia. Indeed, in many very interesting respects these two diseases, which are so usually treated of separately, and considered perfectly distinct, remarkably correspond. They are both strictly nervous diseases not only having their seat in some portion of the nervous system, and exhibiting the same nervousness of symptom, but any medicines, which have hitherto been found in the least to influence them, are such as acknowledg'dly possess some peculiar power over the sentient system. They are both dependent on similar causes—nervous irritation—whether that irritation arise from the immediate injury of some nervous tissue, or the mediate agency of some distant excitement. They are both idiopathic, as well as traumatic; for, in our opinion, it has been tolerably well demonstrated that cases of real hydrophobia have occurred in persons, who had never been bitten at any period of their lives by a rabid animal. They are both attended by many symptoms equally common to either,—such as violent, irregular and repeated spasm, difficult or impracticable swallowing, pains in the head, abdomen and back. They are both equally uncertain in their occurrence, after the cause which usually excites them has been applied; for hydrophobia no more certainly succeeds the bite of a rabid animal in all instances, than does tetanus a lacerated wound. They are both alike rapid in their progress, active in their character, intractable in their obstinacy, and fatal in their career; and lastly, they are both almost, if not altogether purely functional diseases; so that after death the knife is unable to detect any organic mischief at all adequate to the symptoms of disturbance which were manifested during life. It is, no doubt, true that an invincible dread of water is a very ordinary feature of hydrophobia, which is not usually met in tetanus, and that locked jaw and empros and opisthotonotic convulsions occur in tetanus without appearing in hydrophobia. But it is equally certain that these very symptoms, which have been considered so pathognomonic and peculiarizing, are neither inseparably present in their respective affections, nor invariably absent from their opposites. These opis and emprosthotonotic movements, which appear in tetanus, have been seen accompanying hydrophobia; and the *terror aquæ*, which marks the latter, has been found in attendance upon the former. These facts—and others might be advanced, such as the fact of

hydrophobia succeeding to a bite inflicted by a dog under excitement, but not mad—render it probable in our eyes, at least, that there may be less etiological connexion between the rabid state of the animal which bites and the disease of the person bitten, than between the structural violence committed by the bite itself and the subsequent tetanic symptoms. We say *probable*, because we are not yet prepared to maintain the precise identity of hydrophobia and tetanus, nor would we select the present as the most appropriate place for doing so, were we prepared; but we certainly can discover very striking resemblances between these two diseases, and we are not aware of any very serious practical evil, which could issue from the adoption of such a theory. It may, indeed, be argued that if the poisonous saliva of the rabid animal have no effect in inducing hydrophobia, how happens it that hydrophobia so frequently succeeds to the bite of an animal so circumstanced? or it may be objected that the theory, which supposes such a thing, would render all local measures, intended to prevent absorption of the poison, useless, and would thus, were it badly founded, tend to endanger the patient's life. These and other objections may be urged which it were now irrelevant to reply to. Our only object has been to call the attention of the reader to a similarity, which the facts we have adduced are sufficient to establish; in order that future observers may make further inquiries upon a question, which appears to us deserving of investigation.

The Doctor has favored us with six very interesting cases of this frightfully fatal malady. By these it would appear that several of those persons who were attacked, had been very irregular in their habits, and were highly predisposed to suffer from any such nervous distemper—that the wound had in general been inflicted upon some uncovered and, therefore, unprotected part of the body—that the first sensations of pain were generally referred to the wounded part, and that the latent period, which intervened between the infliction of the injury and the supervention of the specific symptoms, varied from six weeks to two months. Some have fancied that cases have occurred, in which the disease did not break out for years after the wound had been received, and the author believes that a shorter period than six weeks seldom intervenes between these events in any instance. In what state the poison exists during this period of latency—whether it be slowly but imperceptibly saturating the constitution, and thus preparing it for the sudden and complete development of the evil; or whether it be totally inactive, either in consequence of its own weakness, or the insusceptibility of the system; or, lastly, whether it require a certain period to be absorbed, and must be in the circulation for a certain time before its specific influence can be exerted—is not only unknown but seems likely to remain so. It appears probable to the Doctor—

“ That for some considerable portion of that time it is confined to the neighbourhood of the primary wound; and the secondary local action, which so often precedes the appearance of symptoms, leads to the belief that some excitement of the part is necessary, or at least frequent, before the constitutional disease is developed, or perhaps produced.—These considerations lead to one very important practical inference,—that the excision of the part will probably prevent the disease, though performed a considerable time after the accident; and to this we can of course place no limit, except the actual appearance of the disease: when that has once established itself, we have in a case which is above recorded, a strong evidence of the inefficacy of an operation.” 605.

The case here alluded to is the following:—

(282.) A young man had been severely bitten on the back, palms and fingers of the left hand by a strange dog, from which he had been endeavouring to save a child. The wound healed, the child remained unaffected, and the dog was killed; so that no apprehensions of danger were entertained. In less than two months thereafter, however, stiffness about the back part of the head came on, with tightness of the epigastre, shivering and some difficulty of swallowing. These symptoms so rapidly increased in intensity as shortly to dispel all uncertainty as to their real nature, and as every remedy yet tried in this disease had proved fruitless, amputation of the bitten limb was proposed, and the left arm was removed above the elbow. As soon as he had recovered from the shock of the operation, he said he felt better; but considerable haemorrhage soon took place from the stump, violent convulsions succeeded, priapism came on, the pulse grew weaker, and he died 48 hours after he took ill. There was no disease worth notice in either the membranes, brain, or spinal cord. The membranous lining of the trachea, particularly about the bifurcation, was vascular, and the lungs were somewhat emphysematous, as was the cellular tissue in the anterior mediastinum. The oesophagus was slightly marbled, and near the cardiac orifice of the stomach the mucous lining denoted partial turgescence.

Indeed, the Doctor's observation concerning the inefficacy of an operation after the full development of hydrophobic symptoms is equally applicable to every other remedial measure. Every curative plan hitherto attempted has equally failed, and the only chance of safety, which art affords, consists in endeavouring to prevent the approach and establishment of a disease, which when once developed is no longer within the influence of human skill. It is, therefore, only adding mutilation to misery to amputate the bitten limb after the pathognomonic symptoms of hydrophobia have been clearly and fully manifested, for whether the essence of this disease consist in a poison to be absorbed, or in a morbid nervous action to be enkindled, the period of hope has then expired, and all kinds of treatment, which aim at any thing more than transient palliation, have, at least as yet, been tried in vain. Bleeding was attempted in the 280th case.

(280.) A man, of 52 years of age, had his upper lip bitten by a dog, but he had caustic applied to the wound and it healed. Five weeks afterwards he refused to take his tea and complained of headache, loss of appetite and shivering. Sixteen ounces of blood were taken from the arm, and a purgative was given him; but he passed a perfectly sleepless night, and next day he was much worse. On attempting to eat an orange, he no sooner had it brought to his lips, than he leaped with force out of the bed, and had he not been restrained by the bystanders would have rushed out of the apartment. He was again bled to 40 ounces, which weakened his pulse, but his restlessness, distress of mind, and convulsions continued. He feared the approach of any thing to his lips, he respired ten or twelve times in a minute, he spoke in a hurried and indistinct manner, and he refused to spit, lest it might agitate him. One pint of blood was again taken from his arm, which had only the effect of rendering the pulse imperceptible at the wrist, for a violent tetanic convulsion came on while the arm was being tied up.

He complained of an ardent burning heat in his head, and about the pubis, and said that, dare he drink it, he would give the world for a pint of beer. He continued sensible to the last, but his headache was so intense that he requested those about him to squeeze it forcibly, and he expired within 48 hours after the appearance of the first symptoms. "On questioning the wife it appeared that she did not at all believe that the disease originated from the bite; but she said that she thought her husband had always feared that this disease would be the result, though he had not openly expressed it, being as she said a close-minded man."

In the 283d case hydrocyanic acid was tried.

A middle-aged sea-man of very intemperate habits, who had been bitten by a small dog, of which he knew nothing, was seized with hydrophobic symptoms about four months afterwards. Two pints of blood were removed from his arm in two bleedings, and then he was placed under the influence of prussic acid in ten drop doses every two hours, giving two grains of opium and five of calomel in the intervals. He complained principally of weakness and slight pain about the second dorsal vertebra; every effort to drink was made with great difficulty and aversion, and as soon as the fluid touched his lips he heaved a deep spasmodic sigh, which prevented the fluid from being swallowed, and was invariably productive of intense weakness. Porter seemed to be the fluid which he preferred, and by means of a long tobacco-pipe he contrived to drink nearly half a pint of it and some barley-water. Next day his symptoms were unchanged. He had slept little, complained much of want of air, but said he felt no pain whatever. A fan was employed to ventilate him, but in a moment he was seized with a spasmodic action of the diaphragm as in drinking, and it was laid aside. He had yesterday attempted to drink out of a cup, but when requested to do so again he replied, "Oh! for God's sake, gentlemen don't ye talk of it; indeed I would if I could, but I cannot; it does make me so bad." At this time his pulse was 140, his temperature 98°, his tongue was brown and furred, he was thirsty but less so than formerly, and his bowels were open. He now began to talk incoherently, and shortly after a scene occurred, which we shall beg leave to give in the language of the original.

"I shall never be any more comfortable in this world: O Christ, grant that I may live to see my wife once more!" Then a violent spasm almost overcoming him, he sat with convulsive haste on the side of the bed, and presently was got in a reclining posture in his bed. He here continued his vociferations still more loudly, declaring he had never injured any man, and looking towards the window with extended arm; "Ah! this is the blessed afternoon when God will take me to himself; the day is beautiful, but it will be more beautiful presently, I hope: and thus he raved on incessantly. His wife came; he knew her well, blessed her, and told her to be good. What passed after this I do not exactly know, but he grew more and more violent; and some man coming who said he should not remain in the Hospital, but should go home; he joined in the cry, and declared that come what might he would go home. He rose from his bed, and partly supported by his friends, he tottered like a drunken man through the ward, declaring that he would go home, and giving very severe blows with his fists to several who opposed him. His friends at length seated him in a chair, in order to carry him out of the Hospital; but a little before they came to the steps, he sprung from the chair and attempted to escape from them; he was raving, and it was found necessary to shut the gates to prevent

his running naked into the outer court of the Hospital. He was by this time almost exhausted, and sunk back into the chair, still vociferating, till he fell into a state almost of insensibility, his head fell back, and it was scarcely possible to discover in the livid cheeks and the dark parched lips the features of the strong, powerful, I may say healthy man, who but forty-eight hours before was able to fulfil all his laborious occupations, and who but twenty-four hours ago, when brought to the Hospital, still bore scarcely the aspect of disease. He was carried back to his bed ; he never recovered to speak again, but suffered some violent convulsions, in which he threw from his mouth some dark-coloured frothy mucus with saliva, and at a little past 3 o'clock he died ;—the whole period from the first appearance of symptoms being less than forty-eight hours.” 595.

The blood was found remarkably fluid—a little water lay both above and beneath the arachnoid—the pia mater was rather too vascular—there were two bony concretions in the falk—the cerebral substance was firm and rather vascular—the ventricles were unusually dry—between three and four drachms of serum lay in the spinal sheath, but the cord was healthy—the lungs very much gorged with half coagulated blood—a little bloody mucus lay in the pharynx, the posterior surface of which presented a purple blush—the trachea was of a deep chocolate color throughout its whole ramifications—the lining of the œsophagus was healthy, if we except a reddish purple appearance near its termination in the stomach, which presented internally a few star-like bloody spots towards the cardiac and a greenish purple stain at the pyloric end. In the case, which succeeds the one just now given, sugar of lead was tried with the following result.

(284.) A stout middle-aged man, who had for several years complained of a severe cough and occasional giddiness, came home from his club one night very unwell, without having drunk more than a pint of porter. When seen by Mr. Whitmore his appearance was very peculiar, and as he expressed a strong aversion to the opening and shutting of the door, or the blowing of any breath from his mouth, some suspicion began to be entertained that his complaint was hydrophobia. For some time he would not admit that he had ever been bitten by any animal, but he at last acknowledged that one of his hands had been injured by a pug-dog, to which he had been administering some medicine about three months before. As his fingers contained several scars the situation of the bitten parts could not be clearly ascertained; therefore, no local application was employed. From thirty to forty ounces of blood, however, were drawn from the arm, an injection of assafœtida and belladonna was administered, ten leeches were applied to the epigastre and afterwards a linseed poultice. When first seen by the Doctor his countenance appeared anxious, he sobbed occasionally, he expressed the greatest apprehension on opening and shutting the door, he had no pain, his pulse was 88 irregular, he dreaded the approach of what he called “the fit,” he said he thought that he could take medicine if it were made up in pills, but on swallowing a table spoonful of liquid he seemed to do it with extreme effort. A scruple of the subacet. plumbi and eight grains of the ext. belladonna were made up into four pills, of which one was taken every second hour, and a large blister was placed between the shoulders. During the night he became extremely delirious and violent, requiring a waistcoat and two keepers, and by eight o'clock next morning he presented a most pitiable appearance, his countenance being haggard, his articulation

indistinct, and his mind totally unhinged. He coughed much and threw up, with a retching effort, some brown grumous fluid not unlike coffee-grounds, which seemed to be blood that had been effused and altered in the stomach. The lead was increased to seven grains every two hours, and as he began to swallow at this period with tolerable ease, forty drops of Gouillard's extract were exhibited on sugar; but he died in the night—about 57 hours after the period of the first visit. Five hours afterwards the body was examined, when the scull was found thick, but the brain healthy in every respect. The œsophagus was quite natural—so was the larynx, and the trachea contained nothing unusual, save a quantity of mucus which had so accumulated at the bifurcation, as completely to clog up the bronchi, which were at this part somewhat congested. The lungs were dark-colored and rather doughy to the feel, not crepitating very naturally when compressed. They adhered firmly by old connexions, and there was no fluid in the pleural cavities. The heart and large vessels were healthy, and there was no more than the ordinary quantity of serum in the pericardium. The liver was soft and of a drab-green colour, and the gall-bladder was full of healthy bile. The stomach was large and relaxed, full of a greenish-brown fluid, and shewing several distended bloodvessels. The intestines, kidneys and spleen healthy, if we except a patch of cartilage on the convex surface of the last organ.

In these three most interesting cases, then, have we three most different modes of treatment—depletion, sedatives and tonics—but in none would it appear that medicine exerted any obviously good effect upon either the duration or the severity of the symptoms. In consequence of some traceable analogy between hydrophobia and some other nervous disorders, the Doctor seems inclined to hope, that something may be done through the cordial and tonic remedies, which he has found most beneficial in the latter, aided by cupping, leeches, moxa and blisters to the nape and spine. The actual or imagined dysphagia, however, which marks this affection, renders the exhibition of internal medicines always difficult and often impracticable; and the restless irritability and malaise of the patient not unfrequently obviates the application of external agents. If injections can be administered they are the least obnoxious forms, in which internal medicines can be given; but no slight difficulty is occasionally encountered in persuading the patient to submit to more than one or two introductions of the pipe.

In all cases admitting of the operation in proper time, the bitten part should be freely dissected out and afterwards cauterized; and as it has appeared that the application of cupping-glasses to poisoned wounds in all instances retards and in many wholly prevents absorption of the poison, it is advisable to employ them both before and after the excision of the bitten part, when its situation is such as will permit their use. As in tetanus, so is it in hydrophobia—the knife can do nothing after the appearance of the disease; therefore, unless it can be employed immediately on the receipt of the injury, its subsequent application will be fruitless.

From none of the dissections, which have yet been made, is it manifest that any organic lesion of consequence is established by hydrophobic action in any vital part.

"In the brain (says our author) the utmost morbid appearance is some trace of such chronic derangement as may possibly have predisposed to the excessive

irritability attendant on the disease, and some marks of vascular turgescence, even leading to slight ecchymosis, much of which may have arisen as a consequence of the repeated paroxysms and the obstructed respiration. The same may be said of the appearances in the spinal cord, which are generally very insignificant, or are open to much doubt; nor do our researches in the ganglia and the nerves carry us any further. The vascular appearances which have been seen in the fauces, the pharynx, the oesophagus, and the stomach, are by no means constant, though they often exist; and in one case which I saw examined, the attachment of the whole lining membrane of the oesophagus to the subjacent tissue was in a remarkable way weakened, so that the membrane was drawn out with the greatest facility like the finger of a glove; and I have heard the same condition described in another case. All these appearances, however, vary so much, that they must be considered the evidence of effects rather than of causes. The most marked deviation from health is usually found in the lungs, where great congestion is often discovered, and the lining membrane of the trachea and bronchial tubes is of a completely chocolate colour from the same cause. The obstruction to the passage of the air is often so great, or the sudden exertion in respiration so strong, that it is by no means uncommon to find that a partial emphysema has taken place, and that the air is thrown out into the cellular membrane which connects the different lobules of the lungs;—but this is only to be considered a result, and is occasionally found in other convulsive diseases, as in Epilepsy.” 608.

Although, therefore, we have hitherto failed to discover any *anchora sacra* for this disease, the fact of its appearing both by its symptoms and pathology to be wholly functional, not only proves its remediability, but encourages the hope that a more adequate acquaintance with the structure and functions, nature and habitudes of the nervous system may divest our present treatment of hydrophobia, as well as of several other equally obscure though less fatal maladies, of empiricism, by teaching us how its functions have been deranged, by what means they may be re-adjusted, and to what extent their derangement is subject to remedy.

With this disease Dr. Bright closes his *third section* on Irritation, and with this section do his observations on the diseases of the brain and nervous system conclude. Twenty-five *additional cases*, illustrative of various points in both volumes, and a *concise statement of the diseased appearances of the brain and its membranes*, succeed to the paragraph on hydrophobia; but, although valuable in themselves, it is unnecessary for us to refer to these *ad-denda* more explicitly, than by observing that the Doctor's recapitulatory description of the morbid anatomy of the nervous system is the most concise, methodical, accurate and minute, which we have ever read. Regarding it as a condensed and generalized dissection of the 310 cases, with which these *Reports* are enriched, its value can only be estimated by the practical pathologist, who alone can judge of the labor, time, industry and talents which were necessary to collect the *materiel* out of which such a pathological epitome was constructed. To this is subjoined a series of plates illustrative of all the principal diseased appearances of the brain and meninges, and were any thing required to render these reports complete it was just such a collection of engravings. To forty splendidly-coloured drawings a most faithful and scientific pencil has transferred the morbid and multiform appearances, which the dissector's scalpel has disclosed; and in whatever light these plates are viewed, they stand unequalled by any which the English school has yet produced, while we know of none upon the Continent with which they may not confidently compete. The Doctor's first volume of Re-

ports was accompanied by drawings, which perhaps occasionally displayed the painter's skill as strongly as the precise fac-simile of the actual disease, but in these before us the coloring is seldom more vivid than the original may be imagined to have been, and wherever the appearances to be depicted were not of the very deepest tinge, in two or three instances of which (see plates 17 and 31) the pencil was somewhat overcharged, nothing can be more precise, scarcely excepting the original. We would more especially refer to the 1st, 5th, 6th, 12th, 24th, and 30th plates, in confirmation of this opinion; but, although these are evidently the most happily executed, they all are highly creditable both to the author and the artist.

We cannot help regretting that a work of such truly practical importance as the present must be excluded by its price from very many of our libraries, and our regret is the greater when we find that this disqualifying property consists in the costliness and number of the drawings by which its other contents are at once so ornamented and enhanced. Sorry should we be to discourage the progress of an art, which has only begun to shew how auxiliary it may prove to the advancement of anatomical and pathological knowledge. But, however conducive faithful and vivid drawings must be to the full illustration and accurate comprehension of morbid results, which no words can adequately delineate, still it cannot be denied that solid, practical and scientific facts are of infinitely more value, and should neither be sacrificed nor suppressed for the sake of ornamental embellishments. The fringe, unquestionably, adds both to the warmth and worth of the garment, and where it can be had without seriously affecting the price of the article, or tending to limit the extent of its usefulness, it may be purchased with advantage. But when its costliness is so extreme as to treble its selling price, and to place a useful article of wear beyond the reach of many who equally require and desire it, prudence would dictate to the seller as well as to the purchaser, the propriety of divesting the garment of its fringe entirely, or of ornamenting it with a border less expensive in its texture. Until the draughtsman can execute his task on more moderate terms, or until, as in most of the medical schools upon the Continent, our youth are taught to regard the pencil and box of colours equally essential parts of their instrumental apparatus with the forceps or the lancet, it would be our advice to medical writers to separate their text and plates, when the latter are so expensive or so numerous as materially to augment the selling value of the former.

When we lament that Dr. Bright has not pursued this course, we have more regard to the reader's interest than his; and in pressing upon the Doctor the adoption of the plan now recommended, when a second edition shall appear, it is much more from a desire to see the valuable facts and cases which these Reports contain circulating universally throughout the profession, than to suggest to the publisher a more convenient arrangement than the one adopted. Were these Reports printed in an octavo form, with a small type, and accompanied with their present plates in a distinct volume, ten copies would be read for every copy which will now be disposed of, and the general practitioner, for whom they are so especially adapted, would not be forced to depend upon circulating libraries for any knowledge which he may obtain of their contents.

Few enjoy such opportunities for undisturbed and enlightened observation as Dr. Bright—few can test more fully every exploded doctrine and every

novel remedy, and few are qualified to relate more dispassionately, clearly, and honestly the observations which they make. The two volumes, which we now close, are little inferior to an extensive hospital appropriated to diseases of the nervous system. They are quite equal to it in the number of their cases; they are not inferior to it in their variety; they are much superior to it in the well-digested histories with which these cases are accompanied; and, if we refer to the scientific inferences, practical rules and clinical philosophy with which they abound, no comparison can be instituted between them. It is unnecessary to say that a hospital in type is no common spectacle, and it were superfluous to add that one, the wards of which are ever open, and the beds of which are ever occupied, cannot be made to circulate too extensively. Many are no longer able to attend on hospital instruction; many are no longer willing; and not a few there are who, though both able and desirous, are restrained by feelings which it is unnecessary to specify. To each of these the work before us is equally recommended; for he who is either unable or unwilling to come to clinical instruction, may be induced to study it if clinical instruction come to him; and as the first ticket procures him permanently free admission, without the favour of lecturers, or the certificate of governors, he can neither value his own improvement, nor that of the science to which he officially belongs, if he neglect to purchase.

II.

A TREATISE ON THE DISEASES OF THE HEART AND GREAT VESSELS, COMPRISING A NEW VIEW OF THE PHYSIOLOGY OF THE HEART'S ACTION; ACCORDING TO WHICH THE PHYSICAL SIGNS ARE EXPLAINED. By *J. Hope*, M.D. formerly House Physician and House Surgeon to the Royal Infirmary of Edinburgh; Physician to the Mary-la-Bonne Infirmary, &c. Octavo, pp. 612. London, 1832.

In our last number we had barely sufficient space to notice this work in a general manner, and advert to the opening chapter which treats of the relative anatomy of the heart. We have already said that we hail this as one of the many signs that surround us, of the progress of a rational and unprejudiced mode of investigation of disease in this country. When men of sense and science, young men too and rising ones, laugh at the obstinacy of bigots and the sneers of those who, standing still themselves, would have all others stand still also, when this is seen and done, the prospect is fair and encouraging for truth. But we shall confine ourselves, at present, to the subject immediately before us, and lay before our readers an abstract of those portions of Dr. Hope's volume, which we think will prove most generally useful and acceptable.

"The work is divided into six parts; I. The Anatomy and Physiology. II. Inflammatory affections. III. Organic affections. IV. Nervous affections. V. Miscellaneous affections. VI. Cases. Although every arrangement of diseases of the heart presents considerable difficulties, and I am by no means perfectly satisfied with the one which I have adopted, it appears to me preferable to others, because affections of the same class, being thrown together, by juxtaposition reflect light upon each other; nor, at the same time, are the inflammatory, and the organic af-

fections in general so intimately connected, as to render their separation impossible without doing violence to the continuity of the subject. 'The miscellaneous affections are ranged by themselves, because they are not reducible to any of the preceding heads.' xxv.

This is perhaps as useful an arrangement as any other ; indeed we believe that provided arrangements are free from confusion, and are such as might obviously arise out of the subject, when its parts are pursued in natural order, we say that provided arrangements fulfil these indications they offer as much as can be fairly expected from them. Nosological refinements have this great fault, that they must necessarily be founded in some measure on theory, and this having no real and unchangeable existence in nature, varies with different men and ages, so that at last what was intended to give clearness and consistency to facts and opinions, serves but to perplex and confuse them. We have only to refer to many of the best writings of the last century for the truth of this remark. We beg to draw attention to another passage in our author's introduction, and express our regret that a similar course were not more generally and equally honestly pursued. We can give our testimony to the accuracy of the statement

" As the authenticity of cases and observations is of the first importance, I deem it necessary to present a short explanation of the manner in which I have conducted my investigations. Being persuaded that no evidence is so suspicious as that of the senses, because the magnitude of an error is in proportion to the certitude which is supposed to attach to that mode of exploration, it has constantly been my endeavour to avail myself of the collective testimony of many. Accordingly, I have, for publication, preferred hospital cases, as being the best attested ; I have invariably *written* the opinions or *diagnoses* before the death of the patient ; have publicly tested them by the results of post-mortem examination ; have minuted the dissections with the subject before me, and according to the prevailing opinion of the individuals present ; and, generally before laying down my journal, I have annexed such remarks as the case suggested, while the circumstances were fresh in my recollection. Finally, I have obtained signatures where a case was very remarkable, or where there appeared a possibility of its being subsequently called in question. The cases appended to this work are nearly verbatim transcripts from journals thus kept ; and, in order that they might present a just idea of the possibility of detecting disease of the heart, I have not taken them by selection, but, excepting a few, mostly without diagnoses, have introduced the whole of which I took notes in St. George's Hospital within a definite period. They will be found, I believe, to substantiate the view which I have offered of the heart's action—according to which the physical signs are explained ; and, to the practical student of auscultation, by standing in the relation of exercises to a grammar, I entertain hopes that they may prove one of the most acceptable portions of the volume." xxvii.

Nothing could be more fair, more characteristic of a zealous love of truth than this method of study and of recording what is witnessed. Yet men must not be blinded even by this, nor take even evidence of so high a character for more than it is worth. Such is the construction of the human mind, that guard against error as we will, it steals on in our despite. Though many men agree upon a point, it is not necessarily true, nor is it necessarily false, though the majority vote it to be so. Those who see much of mixed investigations will probably agree with us in what we are about to state. Either one individual, from his talents, station, confidence, or other circumstances, gives the law to which the others bow, or seem to bow, or two or more parties are formed, who, finding they cannot agree, most commonly come at last to a compromise, which is usually in the favour of the most pertinacious and most patient. This is no caricature, nor is it said in jest. The history of medicine furnishes but too many instances in which majorities have gone on observing facts and warranting them, which have turned out at last to be false facts notwithstanding. Perhaps we may be playing the same game now, and our scrupulous accuracy may kindle a

smile in the twentieth century. We do not make these observations to derogate in the smallest degree from the merit or the confidence due to Dr. Hope. He has taken the best mode which human ingenuity can devise, for procuring and ensuring the objects of truth, but still we must employ the means of judging and of weighing evidence with which Providence has endowed us, in order to render the attainment of those objects still more probable and easy.

Passing over the first chapter to which we have already alluded, we stop at the second, which treats of the action of the heart.

ON THE ACTION OF THE HEART.

When the ear or a stethoscope is applied to the region of the heart, two successive sounds, followed by an interval of silence or repose, are distinctly heard. With the first sound, or at least so near it that the interval is scarcely if at all appreciable, there is usually a stroke or impulse communicated to the ear of the examiner, whilst the second sound is accompanied with little or none. The first sound is also duller than the second, slower, more prolonged, and terminating in it without a perceptible interval; the second is louder and smarter, "like the flapping of a bellows valve." Whoever applies his ear to the chest of a healthy person will distinctly hear the sounds, and feel the impulse of the heart, but it requires some practice to be enabled to analyse and discriminate them in the foregoing degree. These *sounds* were first noticed by Laennec. He attributed the first to the contraction of the ventricle, the second to that of the auricle. For eight or ten years this opinion of Laennec remained unquestioned, the diseases of the heart were explored stethoscopically with these views, and though some erroneous diagnoses were made, that is, published, other, and remarkably correct ones, were undoubtedly derived from them. This is of importance, in assisting to decide some questions that will presently arise. Well then, Mr. Turner called in question Laennec's exposition of the cardiac sounds, because the auricular contraction which he counted *second*, was found in the experiments of Haller, Harvey, Lancisi, &c. not to follow, but *precede* the ventricular, in fact to be the first. But Mr. Turner was more successful in shaking another's tree than in growing his own, and he was followed by Dr. Williams, who was yet more eminently unhappy in his conjectures, and by Dr. Corrigan who was very violent and very wrong. For the speculations of these gentlemen, and for arguments which we urged at the time against their views, and we presume with good effect, since they now appear to be generally abandoned, whereas at that time our contemporaries were "in most wicked haste to speed" to their adoption, for these and other matters connected with the subject we must refer our readers to former numbers of this Journal, and proceed to Dr. Hope's experiments and conclusions. His first experiments were performed on rabbits and small animals. Owing to the rapidity of their circulation much could not be proved, though one thing was so to demonstration:—that Dr. Corrigan and his colleagues are probably the only men in the world who could see what they saw, hear what they heard, and be satisfied of what they were satisfied of. As Dr. Hope's experiments were detailed at the time in the Medical Gazette, we cannot republish them here. At the conclusion of these experiments and researches Dr. H. entertained the following impressions, which we believe were also entertained by those who witnessed the experiments, and had previously paid any attention to the subject.

"That, in small animals, the auricular systole took place immediately *before* the ventricular, and not *after*, as supposed by Laennec, I regarded as certain, both from the evidence of my own experiments and from the concurrent testimony of the old physiologists. It was to be presumed that the same occurred in larger animals, but it remained to be proved.

That the *impulse* and *first sound* were referable to the ventricular, and not to the

auricular contraction, I was equally persuaded, 1st, because the pulse, unquestionably a result of the ventricular systole, coincided so nearly, if not in every case perfectly, with the impulse and sound, that these three phenomena did not admit of being ascribed to any but the same cause; 2d, because clinical observations had proved to me, that certain abnormal modifications of the heart's impulse and first sound corresponded with certain morbid conditions of the ventricular, but not of the auricular parieties.

That the *second sound* did not depend on the auricular systole, was indubitable; because the one was prior, and the other subsequent, to the ventricular contraction.

That it did not depend on the closure of the auriculo-ventricular valves was equally certain; because the closure of those valves takes place at the commencement of the ventricular contraction, whereas the sound occurs at its termination.

That it was not due to any other action of the auriculo-ventricular valves was obvious from physical considerations of their anatomical structure.

That it was not ascribable to the retrocession of the semilunar valves, I entertained a strong presumption, from having found the sound unimpaired, though the valves, on one side of the heart at least, were rigid with ossification; and the presumption amounted almost to certainty, from my having found the sound not only undiminished, but increased, in cases of enormous dilatation of both ventricles, in which it was impossible that the cavities could ever empty themselves; and where, consequently, the motion of the valves must have been impeded by the constant pressure of fluid on both sides (*vid. for instance, case x.*)” 17.

It remained to be ascertained what was the cause of the second sound, and, we may add, that it remained to be more conclusively established that the ventricular systole was the cause of the first. Not to enter into reasonings too discursive for the pages of a review, Dr. Hope was led to conjecture that the sound was owing, in some manner, to the ventricle, and that it was produced by the influx of the blood into the ventricle after its contraction. In order to determine this, if susceptible of determination, our author resolved to perform some experiments on larger animals, in which the results would be less unsatisfactory. Many gentlemen were present, during their performance, at the veterinary institution of Mr. Field, in Oxford Street, and we can vouch for their having been conducted in a manner as little calculated as might be to vitiate the conclusions, or favour error. Before proceeding to the experiments, the following queries were distributed to those present, as well as sent to Mr. Brodie, who was prevented from attending in person.

- “ 1. Do the auricles contract immediately before the ventricles?
- 2. Does an interval occur between the two contractions, or is the succession so rapid as to amount to continuity of action?
- 3. Does the ventricular contraction cause the impulse, pulse, and first sound?
- 4. Do the ventricles contract completely, and do they remain closed and empty, during the interval of repose? Or—
- 5. Do the ventricles dilate again immediately after their systole; and is this dilatation attended with an influx of blood from the auricles?
- 6. Is the influx of blood into the ventricles during their diastole the cause of the second sound? If not—
- 7. What is the cause of the second sound?” 21.

Perhaps it may be thought that we are dedicating too much space to physiological and experimental inquiries; but the fact is, that the whole question hinges, as Lord Castlereagh would say, on these fundamental premises. Unless the correspondence of the sounds with certain physiological conditions of the heart is established, where are we to look for diagnosis through the medium of auscultation? At the same time we shall endeavour to be as brief as possible, and rather indicate the results than the means of arriving at them. For these we must refer to the work itself. Rabbits, then, having been found to be too small to furnish satisfactory data, asses were selected, and as many as five experiments were made, in the presence of several physicians and surgeons of cha-

racter and judgment. In order to shew the manner in which the experiment was conducted, we may select the following passage.

"EXPERIMENT II. The heart of an ass was exposed to view in the same manner as before, but with still greater celerity. For *about a minute only*, the action was quivering and irregular; it then fell to its natural standard (40 to 50 per minute), became *perfectly regular*, and the ventricular contraction, as felt by the hand and the stethoscope, was performed with a power which can scarcely be imagined from an examination on the outside of the chest.

Three successive motions—namely, the auricular systole, the ventricular systole, and the ventricular diastole—were now distinctly recognized and acknowledged by all who witnessed them. The stethoscope was applied to the ventricle, and the two sounds were clearly and unequivocally heard even by those who were unaccustomed to the instrument. Five gentlemen listened deliberately twice over, and two of them, three times, before it was dictated that, 1st, *Drs. Hewett and Hope, and Messrs. Lune, Field, and Cooper, listened successively through the stethoscope applied to the ventricle, and severally counted 1, 2, synchronously with the sounds which they heard; while the others ascertained, by the touch and sight, that the sound 1 coincided with the ventricular systole, and the sound 2 with its diastole.*

This part of the experiment was so deliberately performed that it occupied from ten minutes to a quarter of an hour, as near as could be judged from the whole time expended (from twenty to twenty-five minutes), and each of the experimenters was asked whether he was satisfied, whilst he had still an opportunity of renewing his examination.

It was now submitted to investigation, how the ventricular systole could occasion the impulse; since the body of the organ appeared to *recede* during that motion. The result was the following note:

2. While the ear rested on the stethoscope applied to the middle of the ventricle, the impulse was felt by the auscultator to coincide with the systole, notwithstanding that the body of the ventricle appeared to be receding at the moment the impulse took place.

During the course of the experiment the action of the auricle was again examined. Its anterior edge and surface only were in sight, the root and sinus being concealed behind the ventricle. It was noted that,

3. The auricle never emptied itself, and its contraction was always very inconsiderable. The anterior edge and surface were seen to retract with a rather sudden motion; but as the extent of the motion was very inconsiderable, it had the appearance of being feeble.

The contraction of the auricle was so much less than there was reason to anticipate from the extent of its action in smaller animals, that it was questioned whether it was, in the present instance, performed with the natural vigour. The extraordinary power with which the ventricle acted, favoured the affirmative; and as the proportion of the auricle to the ventricle is singularly less in large animals than in small, there is reason to suspect that they perform a less important function in the former." 28.

The results may be comprehended in the ensuing quotation. We think, however, that Dr. Hope has not arranged these experiments with the conclusions deducible from them, so lucidly as he might have done. Had he merely stated the facts observed in the experiments first, and subsequently the inferences or conclusions to which those facts might legitimately appear to give rise, he would have avoided what appears to us to savour a little of confusion and iteration. When the work shall come, as we have no doubt that it will, to another edition, Dr. H. may perhaps be enabled to make some alterations in the arrangements of this portion of it.

"Of the Motions of the Heart.

1. The auricles contract so immediately before the ventricles, that the one motion is propagated into the other, almost as if by continuity of action; yet the motion is not so quick that it cannot readily be traced with the eye.
2. The extent of the auricular contraction is very inconsiderable, probably not

- amounting to one-third of its volume. Hence the quantity of blood expelled by it into the ventricle, is much less than its capacity would indicate.
3. The ventricular contraction is the cause of the impulse against the side; first, because the auricular contraction is too inconsiderable to be capable of producing it; second, because the impulse occurs after the auricular contraction, and simultaneously with the ventricular, as ascertained by the sight and touch; third, because the impulse coincides with the pulse so accurately as not to admit of being ascribed to any but the same cause.
 4. It is the apex of the heart which strikes the ribs.
 5. The ventricular contraction commences suddenly, but it is prolonged until an instant before the second sound, which instant is occupied by the ventricular diastole.
 6. The ventricles do not appear ever to empty themselves completely.
 7. The systole is followed by a diastole, which is an instantaneous motion, accompanied with an influx of blood from the auricles, by which the ventricles re-expand, but the apex collapses and retires from the side.
 8. After the diastole, the ventricles remain quiescent, and in a state of apparently natural fulness, until again stimulated by the succeeding auricular contraction.

Of the Sounds.

9. The *first sound* is caused by the systole of the ventricles.
10. The *second sound* is occasioned by the diastole of the ventricles.

Of the Rhythm.

Order of succession.

1. The auricular systole.
2. The ventricular systole, the impulse, and the pulse.
3. The ventricular diastole.
4. The interval of ventricular repose, towards the termination of which the auricular systole takes place.

Duration.

This is the same as indicated by Laennec, viz.
 The ventricular systole occupies half the time, or thereabout, of a whole beat.
 The ventricular diastole occupies one-fourth, or at most one-third.
 The interval of repose occupies one-fourth, or rather less.
 The auricular systole occupies a portion of the interval of repose." 30.

We were present at the performance of some of the experiments, and can, therefore, vouch for the accuracy with which they are detailed, as well as for the unanimity which prevailed in all who witnessed them, respecting the conclusions to be drawn from them. It appears to be undeniable that the first sound, the impulse, and the pulse, coincide with the ventricular systole; that the second sound is connected with the ventricle, perhaps dependent on its diastole, perhaps not, but ventricular certainly; and, lastly, that the auricle has nothing to do with either sounds or impulse, nay, that it does not seem to act with sufficient regularity to offer a probability of any regular or constant sign attending its actions, natural or morbid. Now the establishment of the close and inseparable connexion of the cardiac sounds and the impulse with ventricular action, and especially of the first sound, the impulse, and the pulse with ventricular contraction, is of paramount importance. In the investigation of disease, we generally find the alterations of sound chiefly noticeable in the first, and in it the different bruissemens are commonly perceived. They indicate, they have always seemed to indicate, alterations in the ventricular constitution—they are found by post-mortem investigations to do so—and, if specious reasonings or deceptive experiments had led men to believe that they were not connected, but that the first sound was auricular and not ventricular, our facts would have been vitiated, our experience confounded; in short, the auscultic study of the heart would have been based in worse than ignorance, in positive error. It was from experience,

from the consciousness of the first sound and impulse having proved, in practice, so safe a guide in studying ventricular alterations, that we all along opposed the heresies and fallacies of gentlemen, to whom we have sufficiently alluded already.

Dr. Hope makes many interesting, indeed valuable, remarks upon the action of the heart, and of its component parts, but having given the pith of his conclusions, and having cleared our way of some outstanding errors and misconceptions, we must refer to the work itself for further information on this subject. We have stated enough to enable the auscultator to proceed with confidence, and the public to receive his deductions without misgiving. At the same time we must make one observation which appears to us to be warranted by the present bearings of this important question. Although we have no doubt that the first sound, impulse, ventricular systole, and pulse coincide, and that the second sound is produced by the ventricle, yet we do not consider the manner in which the latter is produced as exactly determined, and all is yet uncertainty with respect to the physical signs dependent on the auricles, if any do depend upon them : nay, we are not even accurately informed of the laws which regulate and rhythm which characterises their ordinary contractions. We press these remarks the more strongly because in the investigation of disease we have long been struck with the uncertainty which attends the diagnosis of auricular alterations, and as their physical signs were always looked for in the phenomena developed by the second sound, it can occasion no surprise that such should be the case. We must remember that at present then we possess no *auscultic* means of determining the condition of this portion of the cardiac organ. It is better at once to own a truth, than to attempt to delude ourselves or mystify others.

The second section which treats of the physiological phenomena of the heart's action must be passed over. As our space is necessarily limited we must confine ourselves to the more strictly practical parts of the volume. What has hitherto occupied us was absolutely necessary, because it was and is the foundation of practical diagnosis. Neither can we devote much space to the pathological phenomena of the heart's action, for these admit of being noticed in the description of its particular affections. However, there are some points that we cannot entirely neglect.

1. In hypertrophy the first sound appears to be prolonged, and the impulse is augmented and frequently lengthened. The second sound is frequently diminished, sometimes almost obliterated as it were by the preponderance of the first. These are phenomena that will strike every careful observer, and we subjoin Dr. Hope's explanation of them. "The power of the impulse," says he, "is increased in the direct ratio of the hypertrophy ; and the movement is a progressive heaving, because the hypertrophic ventricle *contracts slowly*, and with a gradual progression. For the same reason the first sound is diminished—the impulse communicated to the contained fluid not being sufficiently smart to occasion more than a dull, stifled sound, if any at all. The second sound is dull and weak because the unyielding thickness of the ventricular walls renders their expansion by the fluid more difficult and gradual ;—consequently, the re-action, generating the sound, is more languid."

In ventricular dilatation the impulse is slight, brief, the first sound clear and loud, the second also increased. The reasons for these circumstances may be found in the converse of their causes and attendant phenomena to those of hypertrophy. We must confess that we have found the physical signs of dilatation less conclusive and satisfactory than those of hypertrophy, and that we have made more mistakes and seen more made with the former than with the latter. Were auscultic signs trusted to alone we believe that the stethoscopist would be wrong as frequently as right, with respect to moderate dilatation of the ventricles. But the judicious practitioner is he who combines all means of diagnosis—general symptoms, special signs, the knowledge derived from cadaveric inves-

tigations, and the calculation of probabilities from mixed or doubtful evidence : who strengthens the weak part of one means of diagnosis with the helps derivable from another.

In hypertrophy with dilatation the sounds produced are a mixture of those occasioned by either. In valvular disease certain murmurs are produced, but these may be noticed more particularly hereafter.

"Obstructions of a hard, rugged kind, as ossifications, occasion louder murmurs than smooth obstructions, because they more completely break the current of the blood. Murmurs are not, as is often supposed, louder, *cæteris paribus*, in proportion as the valvular contraction is greater. On the contrary, the loudest murmurs are produced by a moderate contraction, and they become weak when it is extreme. Thus, a rugged osseous concretion, the size of an ordinary pea, in the aortic orifice, I have found to produce the loudest possible murmur ; whereas, a contraction of the mitral or tricuspid valve to the size of only two, three, or four lines in diameter, I have frequently known to occasion little or no murmur. Osseous asperity, alone, without contraction, produces considerable murmur. From the above premises, it may be stated as a general principle, that the loudness of a murmur is in proportion, not only to the roughness of the obstacle, but also to the quantity of fluid transmitted through the valve and put in preternatural commotion by the obstacle. The effect we should naturally expect to be aided by the force and velocity with which the fluid is impelled ; and, accordingly, we find that when the ventricle is hypertrophic, or the circulation hurried, the murmur is proportionably louder. A simple illustration of these doctrines may be obtained by employing air instead of fluid, as the sonorous medium. Thus, if air be blown with equal velocity through a large, and a small orifice or tube, the sound is louder from the former. If the velocity be increased, the sound is proportionably augmented, and it is, *cæteris paribus*, always louder when the tube or orifice is rough or unequal."

A contraction of the mitral or tricuspid orifice to the size of the natural aortic or pulmonic orifice, generally produces a murmur. On what does this depend ? Not on the mere circumstance of the contraction ; for the aperture, being still as wide as that which affords egress to the blood, ought, therefore, to be equally capable of admitting the fluid without murmur. The murmur depends, I imagine, on the different configuration and position of the arterial, and the auriculo-ventricular orifices. The latter, instead of opening into tubes of their own dimensions, as in the case of the aortic and pulmonary orifices, open, generally with more or less infundibuliform projection, into spacious cavities : and, as the blood, on its delivery, must diverge to fill these cavities, it forms, in this act, various whirls, eddies, and counter-currents, which I conceive to be the cause of the sound. When the contracted valve, instead of projecting into the ventricle, is stretched tense across its orifice, the murmur is proportionably louder. This probably depends on the hydraulic law, that fluids escape with a more abundant and tranquil stream from a convergent pipe, than from a simple perforation of the same dimensions, through a plane surface. It is, perhaps, partly for an analogous reason that a slight patescence of the mitral or tricuspid valve occasions, by regurgitation, a louder sound than might be anticipated from the smallness of the aperture ; for, in this case, from the construction of the valve, the discharging orifice projects into the fluid to be discharged, — a circumstance the most adverse of all others to the free and tranquil delivery of the fluid. This, however, is not the only reason for the loudness of the murmur. Another is, that, in consequence of the superior power of the ventricular contraction, the blood, propelled retrograde by it, moves with greater force and velocity, than it flows forwards by its natural moving powers.

A slight patescence of the valve admitting of regurgitation, may result from a structural lesion not sufficient to present an obstacle to the blood flowing in its natural direction from the auricle into the ventricle,—as that, for instance, from a contraction of the chordæ tendineæ, preventing the margins of the valve from coming in perfect apposition ; and in this way is to be explained a phenomenon which I have frequently noticed ; namely, that a murmur from regurgitation sometimes accompanies the first sound, when none attends the second. A slight contraction, indeed, such as, for example, to diminish the circumference by a quarter, or from

that to half an inch, does not, unless accompanied with ruggedness, occasion any appreciable murmur with the second sound; for the blood has little sufficient space to pass with tranquillity; but if, at the same time, the ventricle is dilated and hypertrophic, a considerable murmur may be created; for the increase of the quantity and velocity of the blood which enters from the auricle, produces the same effect as a greater degree of contraction of the orifice." 62.

Murmurs in cases of hypertrophy with dilatation are produced by the greater capacity and alteration of form of the ventricle in relation to the artery which issues from it. The section on murmur of the heart and arteries independent of organic disease is well worthy of attention, and tends very far to the elucidation of these litigated points. Those who have studied Laennec's work are aware that he has been led into inconsistencies, if not absolute absurdities on the subject of the bellows sound and the arterial thrill (*frémissement cataire*), independent of organic disease. Indeed Laennec is hardly himself when he arrives at the study of cardiac disease; the two portions of his work, that on the lungs and that on the heart, are like the feet of Nebuchadnezzar's image, of iron and clay—they cleave but do not amalgamate. When we come to investigate for ourselves in practice we do not find Laennec's statements on many points, and more particularly of the nervous bellows sound and thrill in the arteries, satisfactorily borne out. As we said above we think Dr. Hope's remarks on this subject particularly good.

"As my own experience does not accord with that of Laennec as to which motions of the heart are accompanied by the murmur, it is necessary to premise that I have found it accompany the *systole* of the ventricles; and not the diastole, unless it, at the same time, and in a predominant degree, attended the systole. In the arteries, it coincides with their diastole. The purring tremor occurs at the same moment and is a result of the same cause. The arterial thrill is nothing more than a less degree of the purring tremor."

Dr. H. believes that the murmurs and tremors, both in the heart and in the arteries are occasioned by modifications in the motion of the fluid. He brings forward conclusive evidence to prove that the motion of fluids in tubes occasions sound, independent of the presence of air, and modifications in the sound are occasioned by modifications in the tube. To show that when the sounds in the heart and arteries do occur there is an increase of friction dependent on a modification of the motion of the blood to account for them, he brings forward the following important facts.

"Eight or ten dogs were bled more or less frequently, from once to ten or twelve times, and at intervals varying from twenty-four to seventy-two hours. The results were, that, on the day following the first or second abstraction of blood to the amount of eight or ten ounces, the systolic sound of the heart, previously loud and clear, became attended with a whizzing or sawing murmur,* the impulse increased and became unusually smart or abrupt, and the pulse became quick and jerking, with a thrill and a throbbing, perceptible over the whole body. These phenomena increased up to the fourth or fifth bleeding, when they appeared to attain their maximum, the sawing sound being extremely loud, the impulse and pulse violently jerking and bounding, the arterial thrill or purring tremor excessive, and the throbbing perceptible not only when the finger was placed on an artery, but when the hand grasped a large surface of the body. A hissing bellows-murmur was, moreover, distinctly heard, when the stethoscope was placed over any considerable artery, as the femoral or carotid. The pulse at this time generally beat from 150 to 190 per minute, its natural standard being about 120."

The phenomena underwent the following changes in correspondence with changes

* "These, it will be understood, are merely varieties of the *bellows-murmur*,—a term which may be taken in a generic sense."

in the circumstances. The animals being extremely nervous and irritable, the pulse was instantly accelerated ten or fifteen beats per minute by the slightest excitement, as that of being moved or startled; and the murmur and jerk sustained, in consequence, a remarkable increase.

After reiterated venesects the pulse became small and weak; but, so long as it remained jerking (or *sharp*, as some would now designate it), the murmur continued, though not so loud as previously.

If venesection was omitted for three or four days, reaction subsided; and in proportion as the pulse and impulse became softer, though without a loss of *real* strength and fulness, the murmur, both of the heart and arteries, the purring tremor, the general throbbing, and the nervous irritability, gradually disappeared.

If, during the full prevalence of all the phenomena, the animal was bled to the approach of syncope, the pulse and beats of the heart, reduced to about 100 per minute, became feeble and soft, and at the same time lost all murmur and thrill; but, in the course of from fifteen to thirty minutes, reaction was established and all the symptoms recurred.

If the animal was held erect by the fore legs, a posture which, either by diminishing the afflux of blood to the brain, or by obstructing the circulation through the heart and lungs, caused the gradual supervention of syncope; the pulse became slow, soft and feeble, and the murmur and thrill were suspended; but they were promptly restored to their former state when the animal was placed on its legs." 74.

From these experiments, it may be concluded that murmur and tremors are dependent on the spasmodic abruptness of the heart's action, that is, on the velocity with which the blood is propelled. Thus we find the bellows-murmur in those affections in which this condition exists; in pericarditis—in those who labour under reaction from excessive loss of blood—and still more in the irritable and excitable of both sexes. In the latter, a very slight cause will excite this morbid action, a sudden movement, trifling exertion, an emotion, nay, an idea. Dr. H. has once seen death ensue from purely nervous action of the heart. The individual was a healthy young female, who became affected on the intelligence that her husband had deserted her, lay twenty-four hours in a state of almost complete insensibility, and the violently-bounding, jerking, and thrilling, arterial throb, together with universal flushing heat and perspiration of the surface, resisted every remedy, and only subsided with the wane of life.

"A few apparent anomalies remain to be explained. One portion of an artery, as the abdominal aorta, or the radial in a case of whitlow, may pulsate more strongly than another. The most simple and generally received explanation of this, is, that arteries are irritable parts, which, under the circumstances alluded to, and under many others, as blushing, increased local determination for the purpose of nutrition and secretion—exemplified by the state of the uterus and mamma during pregnancy, become *relaxed* or lose a portion of that tonic power by which they resist and support the distensive force of the heart's contractions. Consequently, as liquids flow most readily in that direction which offers the least resistance, the relaxed vessel admits an increased quantity of blood at each contraction of the heart; hence its throb,—which is a passive—not an active movement; and, as the augmented afflux is necessarily accompanied with increased velocity of the current, at least until the vessels become gorged, the result is an increase of friction, producing murmur. Another circumstance contributes to the production of the murmur: the relaxed artery, by yielding to the pressure of the heart, becomes not only distended, but elongated and tortuous. Hence, according to the principle developed in page 70, the friction and murmur are increased. One of the most tortuous arteries is the placental during gestation, and in none is the bellows-murmur more distinct. Some have imagined that the pulsation, in these cases, is quicker than that of the heart. It is scarcely necessary to say that this is an error. Corresponding arteries in different limbs have been said to beat alternately stronger than each other,—to me, when I could persuade myself of the fact, it has always appeared to depend on differences of posture, by which the free afflux of blood to the one limb or the other, was prevented. In all circumstances, however, the

murmur and thrill, according to the explanation which I have offered, depend on the motion of the fluid." 79.

We must recollect that the theory respecting the local relaxation of arteries, and their loss of a portion of their tonic power, is but a theory after all. Certain it is, that if arteries be dilated and the heart hypertrophic, if a large artery be diverted from its course, and encroached on in any degree, nay, if an artery be diseased, aneurismal in its course, it will furnish the peculiar thrill which has been the subject of the present section. Whatever makes the blood pass with more velocity and force, accompanied, perhaps, in many instances, with some alteration of condition in the contractile tissue of the vessel itself, seems capable of exciting the phenomenon. Dr. Hope remarks that the purely inflammatory pulse is unattended with thrill. This must depend on circumstances. In pericarditis, the arteries not unfrequently evince it.

INFLAMMATORY AFFECTIONS OF THE HEART AND GREAT VESSELS.

Inflammation of the heart and pericardium has latterly received attentive and merited consideration. From its connexion with rheumatism, and its consequent frequency, it becomes an object of the utmost importance to be enabled to discriminate it without difficulty, and to determine the treatment most sanctioned by principle and successful in practice. The morbid changes consequent on carditis and pericarditis have been so accurately described by Baillie, and so fully by Latham, that we must pass over the chapters in the present volume which are devoted to their enumeration. We should mention that Dr. Hope treats of the inflammatory affections of the heart and great vessels in the following order: pericarditis—carditis—and, lastly, inflammation of the lining membrane of the heart and arteries. The diagnosis of pericarditis has been universally, or almost universally, considered as extremely difficult. With the aid of our modern knowledge respecting rheumatism, and the assistance derivable from physical means of diagnosis, that difficulty is greatly diminished. Dr. H. thinks that pericarditis may be nearly always detected, and we think that it may.

Passing over a very good account of the general symptoms of pericarditis, we stop at Dr. Hope's description of the physical signs.

"*The impulse* of the heart is greatly increased:—not only heaving the thoracic walls vigorously, but being remarkable for its abrupt or jerking character: whence it often shakes the whole anterior chest. Some beats are generally stronger than others, even when the action is regular. The pulse or rather throb of the arteries, often perceptible over the whole body, is of a corresponding nature, each undulation of the blood shooting with instantaneous velocity under the finger, as if through a lax or imperfectly-filled tube; and constituting what is called a bounding, or, more expressively, a jerking pulse,—the pulse that we feel during reaction after uterine or other excessive hemorrhage. Very frequently it is accompanied with a distinct thrill. Sometimes it is stronger and more voluminous, at others, smaller and weaker; yet, in the latter case, it still retains the same jerking character.

When the action of the heart becomes feeble and faltering, the impulse of the organ of course sustains a corresponding change; but, notwithstanding, the jerk accompanies any isolated contraction that happens to be strong.

An impulse and pulse of the jerking description denote an inordinately abrupt and as it were spasmotic, contraction of the heart, probably attributable to an increase of irritability resulting from the inflammation. It is this peculiarity in the beat, which distinguishes it from the beat of a merely accelerated circulation, a distinction perfectly familiar to practical men. The peculiarity subsists not only during the continuance of inflammation, but so long as the action of the heart remains quick after the inflammation has apparently subsided,—a period which generally occupies several weeks, and, if adhesion of the pericardium has taken place, frequently as many months. I have known it exceed half a year. In very protracted cases, it is probable that the irritability of the heart is kept up either by an occa-

sional recurrence of inflammatory action, or by the unnatural circumstances in which the organ is placed by adhesion, or, finally, by a softened state of the muscular substance, the result of carditis.

The Sounds.—The sound of the ventricular systole is not only unusually sonorous, but is accompanied with a bellows-murmur. This sign was first noticed by Dr. Latham, who pointed it out to me at St. Bartholomew's Hospital in 1826. Since that time, I have never found it absent *when the heart presented the increased, jerking impulse* above described. Dr. Latham restricts his observation to rheumatic pericarditis; to myself the phenomenon has appeared to exist equally in every form of the disease. When the action of the heart has been feeble and faltering, I have found the murmur absent; but when, in the same case, the action has, either previously or subsequently, been strong and jerking, the murmur has existed. The reason of this will be obvious from the explanation which will presently be offered. The murmur sometimes continues after the heart appears to have resumed its natural action and the patient to be well; but, so long as it remains, as remarked by Dr. Latham,* 'his return to the habits and exertions of health will bring back palpitation and other symptoms, which bespeak the certainty of mischief still abiding in the heart.'

Not the ventricular systole only, but occasionally, though by no means always, its diastole likewise, is attended with the bellows-murmur; and I have found this supersede and, as it were, annihilate the natural second sound more completely in pericarditis, than, I think, in any other affection of the heart. Sometimes, in short, it is a pure whizzing, equally prolonged as, and almost continued into, the first sound." III.

We beg to confirm the statements of Drs. Latham and Hope, respecting the presence of the bellows sound in cases of pericarditis. In nearly every case of the disease which we have had an opportunity of witnessing and examining, this sound has been present in a greater or lesser degree. As the accuracy of the opinion has been questioned, it is important for all who have had an opportunity of studying cases to record the results of their observation.

When the pericardium contains much fluid, the resonance of the praecordial region becomes dull over a greater space than natural; the impulse is undulatory, and not exactly coincident with the first sound. M. Louis states that he has found a temporary effusion of fluid cause a prominence of the cardiac region. Chronic pericarditis is undoubtedly more obscure than the acute form. The following short extract presents all that our author has to say on its diagnosis.

"*General Signs.*—The signs of chronic pericarditis are much the same as those of acute, but in a very inferior degree. The fever is more that of hectic or marcor, with occasional exacerbation when perhaps the inflammation becomes subacute. The anxiety and restlessness, though sometimes great, are comparatively supportable. The position is less constrained and I have observed that the patient often prefers the sitting posture, with the body inclined forwards. The circulation is less embarrassed, and the action of the heart, though often abrupt and jerking, is usually somewhat feeble, except during any temporary exacerbation of inflammatory action. The pulse, also, is sometimes not very unsteady, though the pericardium be full of fluid, which I attribute to the elasticity of the membrane not being so far destroyed by the inflammation as to prevent it from gradually undergoing extension, and accommodating itself to its contents. Whence compression of the heart by the fluid is in some degree obviated. The patient, I have thought, more frequently complains of a load and fulness, 'something which he cannot get down,' in the scrobiculus cordis, in chronic, than in acute pericarditis.

Chronic pericarditis, especially if such from its commencement, is more obscure than acute. I have, in former years, seen it overlooked more than once. But these cases, when I now revert to them, appear to me to have presented sufficiently cha-

* Lond. Med. Gaz. vol. iii. p. 214.

racteristic symptoms. The history affords the greatest light. If the patient, previously exempt from disease of the heart, has suddenly become affected with its symptoms, attended by marcor and some degree of fever, within a period seldom extending beyond a few months, and which he often dates from a blow or fall on the breast, a rheumatic fever, or an inflammation with pain in the praecordial region, chronic pericarditis may be strongly presumed; and if these symptoms coincide with the physical signs of fluid in the pericardium, the existence of the malady may be regarded as almost certain.

Physical Signs.—The impulse and pulse have much the same general characters as in acute pericarditis, except that, as the heart's action is less vigorous, they are not so strong. The sounds will vary according to circumstances. When the action of the heart is jerking and not wholly devoid of force, the first sound will be attended with a murmur, which, however, is generally very slight. When there is inflammatory constriction of the orifices, a murmur will attend both sounds. Should the heart be dilated, as is frequently the case, the sounds will be increased; and should hypertrophy be conjoined with the dilatation, the impulse will sustain a corresponding augmentation of force. The signs of fluid in the pericardium are the same as in acute pericarditis; namely, the extensive dulness on percussion, and the undulatory impulse." 115.

The chapter on the treatment of pericarditis is judicious, but need not detain us. The author very strongly and very properly insists on the powers of mercury. The fourth section is on adhesion of the pericardium, and as the frequency of this condition does not appear to us to be justly appreciated by practitioners in general, we shall devote a page or two to its consideration. It is a very common consequence of pericarditis, both acute and chronic, and especially of the rheumatic form. It almost always induces enlargement of the heart; indeed Dr. H. has never examined a case of complete adhesion without discovering the latter. We remember two instances of complete adhesion which we saw, and in which the heart appeared perfectly natural. It must be owned that these are rare exceptions to a rule even more than generally true. Our readers can have little difficulty in conceiving why such adhesions should be likely to induce such disease of the heart.

We had intended to have inserted here the signs considered by Dr. Hope as pathognomonic of adhesion of the pericardium. But for these and other matters we must refer to our next Number, the press of matter on the subject of cholera compelling us to bring this article to an abrupt conclusion.

III.

PRACTICAL OBSERVATIONS ON PROLAPSUS OF THE RECTUM. By *Frederick Salmon, F.R.C.S.* Author of a Practical Essay upon Contraction of the Rectum, Piles, &c. Senior Surgeon of the General Dispensary, Aldersgate Street. Octavo, with Plates, pp. 105. London, 1831.

No maladies are more distressingly annoying to a patient, and more perplexing to a surgeon, than those of the rectum and adjacent parts. The reason of this is abundantly obvious; for, in addition to the ordinary exciting causes of disease, which equally affect the same structures in whatever part of the body they exist, the lower gut and urinary organs are almost constantly exposed to the presence of acrid irritating matters, and are necessarily affected by the various agents by which the body relieves itself of them. These causes add very much to the difficulty of treatment; and seldom are the discriminating intelligence and practical skill of a surgeon more apparent and more beneficial than when directed to the management of the different morbid conditions of these passages. It is not merely by the application of proper topical remedies, or by superior adroitness in operating that he is to expect satisfactory success;—to benefit his patient, as he ought to do, it is necessary that he be a minute and diligent observer of every occurrence, and especially of the different excretions; on the condition of which, both the constitutional health, and the soundness of particular organs of the body, depend.

The importance of this duty is perhaps more directly obvious, and has certainly been more appreciated in the treatment of urinary diseases, which have of late claimed to themselves the searching investigation of some of our best surgeons and physicians; who are at length well satisfied that it is not by torturing their patients with bougies and catheters, or by the indiscriminate use of diuretics, that they can hope to afford relief; but that their practice must be regulated by the state and composition of the urinary secretion;—and how is this state to be ascertained, except the fluid is frequently examined and tested?

The very admirable reflections of Mr. Brodie in his surgical lectures, abundantly demonstrate the importance of such accurate observation; and we wish now strongly to impress on our readers the great utility of attending to the varying conditions of the alimentary excretions, whenever the rectum becomes the seat of disease. The very fact that prolapsus and other morbid states so frequently owe their origin to some cause or another affecting the alvine discharges is a strong argument to urge us to the study; but we shall not enlarge on this topic at present, but proceed to lay before our readers the more important facts connected with the subject of prolapsus ani, or prolapsus recti, as Mr. Salmon more properly names it. To understand the nature of this malady, attention must be given to the anatomy of the lower gut. It sweeps down from the sigmoid flexure of the colon to the anus along the hollow of the sacrum, and is intimately joined to the urethra and neck of the bladder in the male, and to the vagina in the female;—its tissues are the same, as in the other bowels, but the muscular coat is con-

siderably thicker and stronger ; and its contractile expelling power is greatly promoted by the action of the powerful levator ani, which is a fleshy funnel, embracing the pelvic viscera, and much contributing to their strength and security. The antagonist to this muscle is the sphincter ani. During health, there is, what may be termed, a mutually-accommodating sympathy between these two, so that when one acts, the other is relaxed, and vice versa ; but in disease, this harmony is disturbed, and much painful distress is thereby occasioned. We shall find that the sphincter is sometimes so rigidly contracted by spasm, as to require division by the knife. Another feature in the general anatomy of the rectum is the abundance and laxity of the cellular substance which surround it, and which is interposed between the different tunics. In some persons this is unusually yielding ; and the slightest irritation, either in the bowel itself, or in an adjoining organ, will force the rectum, or at least one or two of its coats to be protruded beyond the sphincter, or, in other words, will occasion a prolapsus. In the early stages it is not a very serious disease, as the gut may be replaced by gentle pressure ; and the employment of mild astringent enemas prevents its return ; but aggravated cases produce much suffering. Instead of the uniformly soft, smooth, and blood-coloured tumor, as at first, it has become hard, irregular, and dark ;—the rugæ of the gut form so many concentric pendulous flaps, which bleed and ulcerate ; and the sores thus formed discharge a stinking unhealthy matter ; the other symptoms are very well delineated by Mr. Salmon at page 18.

“ It now very soon becomes insupportably painful, and, from its magnitude, prevents the passing of the smallest evacuation without acute agony ; exclusive of which misery, the patient is often compelled to lie down for an hour, or even two, immediately after the motions are passed, and thus patiently to wait the receding of the swelling. In the end, it descends upon the most trifling exertion, and even spontaneously, so that the sufferer is compelled to retain it within the sphincter, by mechanical assistance.” 18.

It is not necessary that we should be detained by any detailed allusion to the ordinary exciting causes of the disease. Mr. Salmon has a very useless chapter, in which he treats of what he calls “ constitutional, or those which are connected with some peculiarity of the general health, or the ordinary pursuits and occupations of individuals ; and the local, or where the affection occurs as a consequence of some other disease, either in the rectum, or the organs continuous.” 10.

All the causes of prolapsus ani are primarily of a local nature ; for in what other light are we to view accumulations of hardened faeces, diarrhoea, and haemorrhoids ? although these are ranked by Mr. Salmon under the head of constitutional causes !

We regret to observe a great vagueness of thought and description, and a most negligent want of precision in arranging the materials of the present work ; to acquaint his reader that prolapsus ani “ may be caused by indigestion ; from a general relaxation of the system, or from a want of due attention to diet,” cannot fail to be extraordinarily instructive !! He tells us likewise that “ another very common source of the disease is sedentary employments, through which the biliary secretion becomes scanty, and a torpid state of the alimentary canal is induced.” It is quite apparent that the prolapsus in such cases is attributable to the collection of indurated

fæces, or varicose hæmorrhoidal veins, one out of many, of the effects of hepatic disease.

It is an observation worthy of remark, and which we have had very frequent occasion to attend to in practice, that prolapsus ani is especially frequent in those who are, or at any period ever have been, subject to hernia; even though the protrusion is at a distance from the fundament, as when it occurs in the umbilicus or groin. The true explanation of this coincidence we believe to be, an original, and it would seem, even hereditary laxity, or slackness of the cellular tissue and weakness of the muscles at the various abdominal apertures; because in such cases we have remarked the excellent effects of general cold bathing, and of tonic medicines, which tend to brace and give tone to the whole system. If we approved of the term "constitutional cause" as applied to prolapsus of the rectum, we should say that this is the only one with which we are acquainted.

The greater part of the 4th chapter, which professes to treat of the "symptoms" of the disease is unnecessary, as it is equally applicable to any other disease affecting the rectum; and we are inclined to say, that the less that is written on this subject the better; because any lengthened description is apt to draw the attention of the surgeon from the only correct and satisfactory way of knowledge, namely, a visual and manual examination. As long as we have eyes to see and hands to feel with, we cannot easily mistake a prolapsus of the rectum for any other malady;—with as much propriety a surgeon might talk of the symptoms of an ulcer! and forget all the time to describe its appearance, as Mr. Salmon has done, in giving a prosy enumeration of the symptoms which precede, or threaten a prolapsus of the rectum, and neglecting any accurate delineation of the protruded gut.

Without therefore any further ado about "symptoms" we shall proceed to an examination of the only important part of the book, that which explains the treatment of the disease. We do not however intend to occupy four pages by telling our readers that if the general, or constitutional health of our patient is disordered, and debilitated, it is necessary to endeavour to restore and strengthen it; much less shall we give formulas for common aperient pills, and draughts. The only general rule that we shall lay down for practice is that the very mildest aperients are not only much safer, but even more effectual than active or drastic purges; which irritate and vex the rectum. The oleum ricini, and the lac sulphuris are the best; with the occasional use of emollient and astringent enemata.

In the administration of these Mr. Salmon gives the preference to a common elastic bottle and pipe, over any syringe. Under these very simple means, the disease at first is speedily cured; should this however not be the case, and the prolapsus remains exposed, or at least liable to descend very frequently, the surgeon must then ascertain whether there is any stricture of the rectum, by the use of elastic gum bougies. We cannot too forcibly urge the importance of this measure, having so very frequently in practice witnessed the want of success, from the ignorance or neglect of it. The most obstinate and protracted cases have quickly yielded to the cautious use of the bougies, and these must be gradually increased in size, in order completely to dilate the narrowed part of the rectum. Case 2d very well illustrates the truth of this, and as it, at the same time, faithfully exhibits the

progress of a neglected example of prolapsus we shall give it in the words of the patient, as reported in Mr. Salmon's work.

"In September, 1825, I was much annoyed by frequent calls to the water closet. Upon inspection of what passed from me I discovered that it was principally composed of slime and blood. I mentioned this to a medical friend, who prescribed blue pills, and told me that by taking these regularly the dysenteric symptoms would soon vanish. I followed his advice, but derived no benefit. I now began to feel excessive pain at the lower part of the gut at all times, so much so, that I was very uneasy whether sitting or standing. I then applied to the surgeon of the ship I belonged to, who considered it advisable to give me more mercury to produce a soreness of the gums, and he informed me he had no doubt of curing me previous to my being called upon to join my ship in the month of January. He, however, did me no good. During the time I was under his treatment, I was advised to attend strictly to regimen, and was not allowed to eat any animal food. My diet consisted of light puddings and vegetables. Under this regimen I soon became very weak, and much reduced in flesh. The time soon after arrived for me to join my ship, and although little able to bear the fatigues of duty, necessity drove me from the shore, and for a month or six weeks I was without medical advice, and eat and drank just as I had been accustomed, without finding my complaint either the better or the worse for it. On the surgeon joining the ship I placed myself under his care. He explained to me that the frequency of my motions arose from a torpid state of the liver, that bile did not flow regularly, and that a regular course of mercury was the only thing to stimulate the liver to proper action. Mercury was therefore again commenced upon, and shortly after leaving England my mouth became sore, and it was considered right to keep the action up all the way to Bengal. My diet during this time was confined to boiled rice, sago, &c. On the arrival of the ship in India, I had become so emaciated that it was supposed by all my shipmates I could not live long. I was then sent to Calcutta, and placed under the hands of a most respectable physician, who said it was not proper to give me more mercury, and advised me to return to England as soon as possible. I remained at Calcutta six weeks, but derived no benefit from his attendance. The constant desire to go to the stool still remained, and it frequently happened that I could not reach the night stool before the evacuations would pass.

In September, 1826, I embarked, and from that time until my landing in England, in March, 1827, I took no medicine, nor was I under any medical gentleman's care. My appetite was good, but the desire to go to the water closet was as frequent as ever, accompanied by great straining and pain in the rectum. I observed, likewise, that whenever I went to stool the gut used to come down, and I was frequently obliged to put it back with my finger. On my arrival in England I once more put myself under the hands of one of my old shipmates now settled on shore, who after he had attended me about two months, recommended my going to the sea side for the benefit of sea bathing. I therefore went to Plymouth, and soon found myself materially better for the change; I was so far relieved that I slept soundly, was never disturbed in the night by an inclination to go to stool, nor did I pass more than three evacuations during the twenty-four hours, and I was also able to take daily exercise: still blood and slime continued to pass from me at intervals. In October I quitted Plymouth, and once more joined my ship to undertake another voyage to Bengal and China.

I did my duty during the passage tolerably well, being obliged occasionally to lay by, and I returned home at the conclusion of the year 1829, no better, but if any thing worse, than when I left England. During these four years the pain in the rectum has often been very great, and I have frequently felt pains in the loins, and cramps in the legs and thighs." 55.

Four years after the commencement of the disease, the gentleman consulted Mr. Salmon, who treated the case very judiciously and successfully, by suitable internal medicines, and by the use of bougies,—in four months he was restored to perfect health.

From the observations of Mr. Salmon, it appears that, in a good many cases of prolapsed rectum, the cause appears to be, a morbid irritability and spasmotic contraction of the sphincter ani, which thereby becomes a permanent obstacle to the function of the bowel, which cannot be emptied without an unusual degree of effort. The application of steam to the part, and the occasional introduction of a plug or bougie, are generally sufficient to remove this condition; but in some cases, Mr. Salmon has deemed it requisite to divide the sphincter, and even to cut out a triangular portion of it. The scoops which he recommends for the latter purpose appear quite unnecessary; a fine-pointed and sharp scalpel, in the hands of a good surgeon, is by far the best instrument. The dilator introduced to our notice by Mr. S. is a useful instrument while performing any operations on the rectum. It is provided with a handle at right angles, so that an assistant can retain it in its place; and, at the side, is a wide slit, extending nearly the whole length of the speculum. In dividing the stricture, or in operating for fistula ani, we turn the slit to that part of the bowel which we intend to cut, either from within outwards, or vice versa; and in the event of haemorrhage, it is a great advantage to have the rectum kept dilated, as we can so much more easily apply any styptic remedy.

When it is deemed advisable that the prolapsed portion of the rectum should be removed, some surgeons employ the knife, while others recommend the ligature, which, although it produces more pain and irritation, is exempt from the risk of haemorrhage, often profuse, and occasionally fatal, after cutting operations about the anus. Mr. Salmon assures us that, by the plan which he adopts in removing the protruding gut with the knife, "not only every reasonable apprehension is removed, but the operation altogether is materially simplified." We give his description as related by himself.

"The sufferer being placed in a convenient position, an assistant separating the nates, one or more of the pins, as may be necessary, is to be passed from above downwards, transversely through the basis of the tumour; These penetrating the muscular coat of the bowel, will prevent the return of the intestine after the diseased part is removed. The pain produced by this part of the operation is insignificant.

The prolapsus being thus secured, the operator, with the hook or the forceps, is to lay hold of one of the prominent portions of the tumour, and to draw it gently towards the opposite side; with one stroke of the scissors he is then to remove the part as deep as the line of division between the mucous and muscular coats of the rectum, the latter of which should be left entire, otherwise a permanent difficulty of relieving the bowels will follow the operation. In like manner, all the protruding portions of the prolapsus are in succession to be taken off.

When treating of the morbid anatomy of this disease, I stated that there is in general a portion of the tumour just around the sphincter of a darker colour than the rest. Superficial layers only of this part should be embraced by the forceps and paired off; care being taken not to interfere with the fibres of the internal sphincter, forming the extremity of the rectum.

If any material bleeding occurs, it is to be checked by the means generally used for stemming hemorrhage, such as cold or astringent washes. In most

cases the flow of blood, which it is better to encourage to a certain degree, will cease spontaneously ; but if we are compelled to apply any ligature, it may be done with facility, as while the pins remain in their situation, we have a commanding view of the parts.

It is my custom to leave the pins in their place for an hour or more after the operation, or the cessation of hemorrhage, to permit the blood to coagulate in the extremities of the divided vessels, by which we prevent any recurrence of bleeding after the bowel is restored to its natural situation. Having removed them, the surface of the divided part should be smeared with sweet oil, and the rectum returned within the sphincter in the gentlest possible manner." 10.

We have been induced to extend our observations on the subject of prolapsus ani, much more on account of the importance of the disease, than of the work now before us. It is scarcely entitled to the appellation which the author has given to it of "Practical Observations," having much more the style and character of an inaugural dissertation than of a well-arranged digest of extended experience and of careful observation. The only very useful part of the book is the simple, though apparently successful, modification which he has introduced in the manner of removing the prolapsus by excision. By the employment of the pins, with which he transfixes the swelling, it is prevented from retreating up the gut, and thus the danger of hemorrhage is considerably obviated. Most of the cases at the end of the volume are more serviceable in increasing its bulk, than its utility and reputation. The accompanying plates, illustrating the appearances of prolapsus, are very well lithographed by that excellent artist, Scharf, and printed by Hullmandel.

IV.

ELEMENTS OF PRACTICAL CHEMISTRY, COMPRISING A SERIES OF EXPERIMENTS IN EVERY DEPARTMENT OF CHEMISTRY, WITH DIRECTIONS FOR PERFORMING THEM, AND FOR THE PREPARATION AND APPLICATION OF THE MOST IMPORTANT TESTS AND REAGENTS. By *David Boswell Reid*, Lecturer on Chemistry, &c. Octavo, pp. 511. Edinburgh, 1830. Second Ed. 1831.

CHEMISTRY, like anatomy, ought to be studied in its practical details ; it is not by reading, or by lectures alone, that the student can acquire a useful and available knowledge of either science ; he must visit the laboratory and the dissecting-room, and there he must put his hand forth to the work ; he must labour to understand all the processes of manipulation and experiment, however teasingly minute—he must acquire a neatness and facility in handling and in operating ; and in all his investigations and studies, he should remember that perhaps one day, and that not far distant, he may be cited, as a responsible and professional man, to give his opinion on some important enquiry.

We have long been convinced that the mode of instruction, in almost all branches of education, and especially as relates to the young surgeon and

physician, is much more of an embellishing, than of a practically useful nature; we have found it so ourselves, and doubt not that others also, when they have left the schools, and are once engaged in the vortex of the business-duties and business-cares of life, have been sorely disappointed, and deceived in some of their supposed professional acquirements. They might be able, perhaps, to discourse well and volubly on the intricacies of caloric and electricity, and be able, or, at least, imagine themselves able, to weigh the merits of the doctrines of atoms and of equivalent proportions; but, if a case of poisoning occurs in the town where they reside, or in the regiment or ship to which they are attached, then, but not generally till then, do they find that their chemical knowledge is mere parade of language, and is utterly useless in practice. We shall never forget the anxiety and fever of mind which were our lot, when, at an early period of life, in a foreign climate, we were called upon to deliver our opinion, in a court of justice, on a case which involved many appalling suspicions; and, although the testimony was declared in all respects satisfactory, well do we remember the impressive vow we made of more intimately and assiduously studying all the details of experimental investigation. We trust that we need not use many arguments to urge the attention of our younger readers, and probably also of those more advanced, to make themselves masters of every branch of science and of knowledge which has any reference to the profession, of which we are members. Did we deem it necessary to excite their appetite and zeal for honorable fame and distinction, we could tell them of more than one example of fortune and renown having been achieved by an acquaintance with experimental chemistry.

At the present moment, there is a senator, than whom none is more deservedly respected and prized by his country, whose personal history affords an instructive commentary upon our remarks. During early life, he was an assistant-surgeon in one of the regiments in India, during the administration of the Marquess of Cornwallis; the troops had been for some time engaged in bombarding a town; and it was remarked by the engineers, that the balls almost always fell short of their aim; the gunpowder was considered faulty, but the question was, how were they to ascertain this accurately? Orders were issued to all the surgeons of the regiments to analyze it, and to send a report of their trials to the Governor. Few were able to comply with the command at all; and those who made the attempt were baffled. There was, however, one youthful assistant, whose great delight at College had been the study of practical chemistry, who succeeded perfectly in the investigation, and whose well-drawn and accurate report satisfied all, that various impurities had been mixed with the saltpetre used in the manufacture of the powder. The reward due to such merit was promptly bestowed; and soon after he rose to proud and enviable eminence over his fellows.

So many have been the improvements, and so great has been the advance, of the science and art of chemistry within the last 30 years, that, from being most uncertain and conjectural, its principles and its facts, as now ascertained, bear all the stamps of demonstrative proof. Moreover, there is a beautiful yet convincing simplicity in carrying on the processes and details of analysis and combination; for the chemist no longer requires, at least for ordinary experiments, the expensive and complex apparatus of a large laboratory; a corner of his parlour will in general suffice. Provided with

a blowpipe, of a size not larger than a pencil-case, and with a set of small glass tubes, which he can make for himself in less than a minute, and the requisite test-agents, which may be all contained in the compass of a writing desk, the student can pursue a course of very extended and most instructive research.

It is to the Swedish philosopher Berzelius and to our no less distinguished Wollaston that we owe so much. They have simplified and rendered easy most of the experiments of chemistry, and have brought them within the reach of every lover of science, wherever he may chance to be placed, and at whatever distance from the schools of knowledge. When, therefore, in addition to the advantages already explained, we consider that practical chemistry is not only of acknowledged importance to those who are engaged in particular professions, but is now regarded as a most valuable branch of general education, from the extent to which it can be applied in explaining the phenomena of nature, and improving the processes of art, further arguments surely are unnecessary to inculcate its high utility on the minds of our medical brethren. No members of society are expected to have a more widely diffused and accurate information on all topics than the surgeon and physician, especially when residing in a foreign climate. Wherever they may be placed, various and most important are the duties required of them; and not the least necessary is that of being efficiently acquainted with the different branches of science; for to them it is that reference is often made in an hour of difficulty and embarrassment. It is well and forcibly observed by Mr. Reid, that—

“ Chemistry is now no longer confined to particular professions, arts, and manufactures, but extends its dominion over the whole economy of nature, and is seen ministering in every direction to the comforts and necessities of daily life. Wherever there are animals, vegetables, or minerals,—wherever there is earth, air, or water, its agencies are found to be in continued operation, and act an essential part in sustaining the life, order, and harmony of the whole. The power and number of its instruments, the exactnesss and precision of its analytic methods, the infinite variety of materials on which it operates, the endless combinations which it can effect, and the creative energies it exerts, have given a splendour to its progress that has arrested the attention of the world, and excited a daily increasing interest in its investigations.” vi.

In our review of this work we have it not so much in design to present to our readers a detailed analysis of its contents, valuable and instructive as these certainly are, as to proclaim the great importance which we attach to that branch of education, to which it forms an excellent guide.

To those who are anxious to obtain, or to revive, the knowledge of experimental chemistry, there is no publication which we can recommend with more cordial confidence. We have very carefully examined the various processes detailed and recommended, and having either performed them ourselves or seen them performed, we can vouch for their accuracy and truth.

Mr. Reid has divided his work into two parts; the first comprising an arranged series of experiments on all the objects of chemical investigation; and the second describing and explaining the important doctrines of equivalent proportions; of electricity and galvanism; of the methods of estimating the specific gravities of bodies; also the various apparatus of furnaces, crucibles, retorts, &c.—the appropriate lutes, and cements, the different

blowpipes, and the mode of using them; in short, every thing which the chemist can wish to know.

We shall select a few extracts that our readers may be enabled to judge of the style, and general character of Mr. Reid's work. The description of the effects of the nitrous oxide, or intoxicating gas is full of truth and interest.

" 107. The characteristic property of this gas is the singular action which it has upon the animal economy, a high degree of excitement being produced after a few inspirations, which is accompanied by a rich and genial glow that pervades the whole frame, and the most pleasing and thrilling sensations, particularly in the chest, and a rapid succession of vivid ideas, with increased power and disposition to muscular exertion, which it is impossible for any one to restrain who has breathed freely of the gas. Out of nearly a hundred gentlemen attending my classes for practical chemistry, who have taken it within the last eighteen months, only one disliked it, complaining of a disagreeable sensation which pervaded the whole body after he had begun to inspire it, but which passed away in a minute or two, without leaving any bad effects or any disagreeable impression. In another case, the individual fainted after six or seven inspirations, but recovered with a kind of start in a few seconds, without subsequently experiencing any kind of depression. On four or five it had no apparent effect; of these, some did not take the gas properly, but one of them, a South American, took a larger dose three times in succession than all the rest, and breathed with every precaution, and after exhausting the lungs as completely as possible of atmospheric air, but still without being in the slightest degree affected by it; a circumstance that attracted our attention more particularly, as it had been lately affirmed in France that the effects which are usually ascribed to it may be traced more to the imagination than to any peculiarity in the gas itself. The rest were all affected by it in a manner which removed all doubts of the power of this singular gas, even in those who were previously impressed with the idea of the accuracy of the statements made abroad.

108. Occasionally it acted so powerfully on the system, that seven people were required to restrain a single individual while under its influence, and prevent him injuring himself or others; no person, therefore, should breathe freely of it by himself. It is curious, that the excitation which it produces passes away as speedily as it is induced, in no case that I have seen did it ever last longer than thirty-five seconds, though it often leaves a cheerfulness and gaiety of disposition for hours afterwards; nor is this state of excitation accompanied by any subsequent depression, as is the case with other stimuli, except when it has given rise to violent muscular exertion, when it is always accompanied by a corresponding degree of exhaustion.

109. Different individuals require different quantities of this gas in order to be effected by it, and by varying the quantity, the same person generally experiences all the varieties of effect which it produces, from the most gentle and agreeable stimulus, to the most furious excitement, when he will show a degree of muscular power of which it might scarcely be supposed the human frame was susceptible. In some cases, though the individual cannot restrain himself, he is perfectly conscious of his own actions and of all that is going on around him, in others nothing is recollected from the time a slight giddiness is felt till its effects pass away, when the individual often recovers with a wild start, as if previously unconscious of the place where he is, and those by whom he is surrounded. I am strongly disposed to believe from the expression of the countenance, and from individuals sometimes attempting to knock their heads on the ground, that very severe pain is sometimes felt where large doses have been taken, although, on questioning them afterwards they have invariably expressed the reverse, and affirmed that their sensations were highly pleasurable.

Those who had never previously heard of the nature of this gas, nor were aware at the time of the effect it was likely to produce, frequently stopped suddenly and exclaimed, ‘that they felt as if they were lighter than the atmosphere, and were going upwards,’ a sensation very generally experienced by all who breathe this gas.” 45.

After having unfolded and explained the qualities, and properties of the three primary gases, oxygen, hydrogen, and nitrogen, and of the different compounds which they form with each other, the author treats of the simple non-metallic inflammables, sulphur, phosphorus and carbon ; the last is the most important, from the great number, and singular diversity of the products of its combination with other substances ; as for example, the *carbonic oxide* ; the *carbonic acid*, one of nature’s most important agents ; the *olifant gas*, to which the beautifully illuminating power of oil-gas is indebted ; the *carburetted hydrogen* or fire-damp, so destructive in coal mines ; the interesting class of medicinal substances, *alcohol and æther* ; and lastly cyanogen, or compound of nitrogen and carbon, which when united with hydrogen gas forms the hydrocyanic, or prussic acid, of all poisons the most instantaneously destroying. The physical properties of this extraordinary substance are detailed as follows.

“354. Pure and concentrated hydrocyanic acid is a limpid fluid like water, but has a strong and penetrating odour, producing severe headache, with nausea and even fainting, when the vapour which it emits is incautiously inspired. I have seen a very stout young man so much affected by smelling some diluted acid, which had been prepared three months before from the ferrocyanate of potash, by the process described, that the bottle containing it fell out of his hand, and for half an hour afterwards he was almost totally unconscious of what was going on around him. It is seldom that the diluted acid affects any one so powerfully, but this shews the great care which should be taken in making any experiments with this substance. A single drop of the strong acid, introduced into the throat of a large dog, kills it after a few hurried inspirations. Its odour is similar to that of the peach blossom, bitter almond, &c. which indeed derive their agreeable flavour from the presence of a small quantity of this acid. I have seen the diluted acid frequently used a year after it had been prepared, and its strength did not appear to be impaired, but the strong acid is sometimes decomposed in a few hours after it has been made, and can seldom be kept more than a fortnight at ordinary temperatures.

Its taste is cool at first, but it soon becomes hot and irritating. It evaporates rapidly when exposed to the air ; if a drop is suspended at the extremity of a small rod, part of it is congealed by the cold produced by the evaporation of the rest.” 151.

In cases of poisoning from prussic acid the medical man is frequently required to describe and explain the tests which prove its presence ; and to narrate the experiments which he has performed with this view. The most delicate re-agents are the nitrate of silver, the sulphate of copper, and the pro-sulphate, or green sulphate of iron ; this last, from its forming the fine pigment of Prussian blue, if caustic potash be added at the same time, is considered by far the most minutely discriminating test.

“363. Dr. Ure states, that this acid may be detected by the sulphate of iron when mixed with 10,000 parts of water, and that the sulphate of copper produces a slight milkiness in water, containing only a 20,000th part. According to M.M. Leuret and Lassaigne, two or three days after death, it is impossible

to detect this poison, as it is soon decomposed or volatilized. Where it is suspected that death has been occasioned by it, they recommend the intestines to be cut into small pieces, and put into a retort with their contents and some water, adding a small quantity of sulphuric acid and applying a gentle heat, which should not exceed 212. The volatile products are condensed in a receiver kept cold with ice, and tested in the manner we have described. The odour alone is often sufficient to indicate its presence." 154.

To counteract the effects of this most potent poison, the remedy upon which we should chiefly rely is the cold affusion.

" Dr. Herbst made a number of experiments on animals, and states that when the dose of the poison was not sufficient to prove fatal, two affusions of cold water in general removed every unpleasant symptom; when a larger dose was given, it was found necessary to repeat it more frequently, and to persevere for a considerable time. The certainty of success depends much on the early employment of the remedy. He tried liquid ammonia repeatedly, which has been much extolled as an antidote to this poison, but says that it will scarcely ever save life, where a dose sufficient to prove fatal has been given, and the symptoms have continued for some time, though he admits, that where the quantity administered is not able to destroy life, it is of great benefit in mitigating the severity of the symptoms. Another evident objection to the use of ammonia, as Dr. Herbst remarks, is, that it excoriates the parts to which it is applied, and when sufficiently diluted to be free from this inconvenience, it is of very little use. The cold water was poured freely over the head and back, and afterwards over the whole body." 153.

Another very important vegetable acid is the oxalic, which, it is well known, bears a considerable resemblance in external appearance when the crystals are small, to Epsom salts, and has frequently been sold by mistake. By the application of very simple chemical tests, these two substances may be most readily distinguished.

" Dr. Christison and Coindet, in an able memoir on poisoning by oxalic acid in the Edinburgh Medical and Surgical Journal, have shown that chalk and magnesia are certain antidotes to this poison when administered in proper time, the oxalates of lime and magnesia which are formed being quite inert." 167.

Having fully treated of the non-metallic simple bodies, the author proceeds to examine the second great class of undecomposed substances, the metals and their various compounds.

We shall allude to one only, viz. mercury and its salts; and so very comprehensive and interesting are the experiments by which this active mineral may be detected in solution, that we are induced to transfer to our pages the report of them as detailed by Mr. Reid.

" The most delicate, perhaps, is that proposed by Mr. Sylvester. A drop of the liquid suspected to contain it is to be placed on a piece of gold leaf, or any piece of solid gold, and the point of a nail or pen-knife or of any small piece of iron or zinc placed in contact with the moistened surface; if any mercury be present, the gold will immediately become white where it is touched by the other metal, uniting with the mercury and forming a solid amalgam, which retains its white colour after the fluid has been wiped off.

986. Put a piece of copper into a solution of any salt of mercury; part of the copper will be dissolved, combining with the oxygen of the oxide of mercury and the acid with which it was previously united, while an equivalent quantity of metallic mercury will be precipitated.

Add a solution of potassa to a solution of a salt of mercury; oxide of mercury will be immediately precipitated. If the mercury in the liquid shall have been in the form of a protoxide, the precipitate will be of a dark colour, but when it contains the peroxide alone, the precipitate has sometimes a reddish colour but is generally yellow, the peroxide disengaged combining with a portion of water and forming a hydrate. Collect the precipitate on a filter, dry it, and expose it to heat at the bottom of a small test tube over a spirit lamp, when globules of metallic mercury will be seen.

Put a small quantity of a solution of a salt of the protoxide of mercury into a glass, and fill it up with lime water; protoxide of mercury will be immediately thrown down and give a dark colour to the liquid.

Into another glass, put a similar quantity of a solution of the peroxide of mercury, and add lime water as before; the solution will become of a yellow colour from the separation of peroxide of mercury in combination with water.

987. Add some hydrosulphuret of ammonia or pass a stream of sulphuretted hydrogen gas through a diluted solution of a mercurial salt, a copious black precipitate will be thrown down of sulphuret of mercury; probably in combination with water.

988. Add a solution of the muriate of tin (muriate of the protoxide) to a solution of a salt of the protoxide of mercury; a copious ash-grey coloured precipitate will immediately appear, consisting principally of metallic mercury, the oxide of tin combining with the oxygen with which the mercury was previously united, and passing to a higher state of oxidation.

989. A solution of the ferrocyanate of potassa gives a white precipitate with salts of mercury; muriatic acid and solutions of the muriates give a white precipitate with salts of the protoxide, composed of the chloride of mercury.

990. All the salts of mercury are completely decomposed or volatilized by exposure to a dull red heat." 337.

The very full and perspicuous account of the tests employed to detect the presence of arsenic and its salts, and of the best mode of employing these, is extremely well worth a most attentive examination by the medical student. We cannot afford room to enlarge upon this subject at present, but may probably, at an early opportunity, revert to it; as it is only by having their attention repeatedly drawn to it in the pages of a periodical work, that the great body of the medical profession can retain the facts in their memory.

As every fact connected with toxicological chemistry is important to know, we are induced to extract the following observations on the appropriate treatment in cases of poisoning from opium;—they embrace, in a small compass, all that requires to be done by the medical practitioner.

" 1180. With respect to the antidotes to be employed when an over dose of opium has been given, there is no chemical remedy on which we can depend; the carbonate of potassa has been proposed to precipitate the morphia from its solution, and prevent it from acting so energetically as it otherwise would do. Recourse should always be had to the stomach-pump when it can be procured, and powerful emetics should be administered till vomiting is excited, giving at the same time large quantities of warm water, and preventing the individual from falling into a state of sleep or stupor if possible, by forcing him to walk up and down till its effects have passed off. Diffusible stimuli should be given at the same time, taking care to avoid every thing which may render the morphia more soluble, as vinegar or acids, which would only increase its deleterious effects; though, when the poison has been completely removed, some of them assist materially in restoring the tone of the whole system." 385.

The chapter on the use of the blow-pipe is one which merits and will

amply repay the perusal, as a knowledge of this most simple, yet efficient instrument of analysis, is indispensable to the practical chemist. Few persons can avail themselves of its employment, from not understanding the method of continuing the blast for a sufficient length of time.

The directions given by Mr. Reid, we know, from our own experience, will, if followed, enable any one to acquire the power.

“ 1361. The first thing that the student ought to do with the blow-pipe, should be to learn to keep up a continued blast at a candle with his mouth, while he breathes freely through his nostrils. For this purpose, he must, in the first place, distend his cheeks like a trumpeter, and breathe solely through his nostrils, never allowing his cheeks to collapse. When he can do this easily, he should put a blow-pipe with a very small aperture into his mouth, placing the pointed extremity in the flame of a candle; during expiration, a small part of the expired air will pass through the tube, and during inspiration, also, air will continue to pass through the tube, if he shall have made his cheeks sufficiently tense and elastic, by distending them previously with air, and the same process goes on at each successive expiration and inspiration. Such is the mechanical rule for learning the method of keeping up a continued blast of air with this instrument, which I have seldom seen fail in enabling the beginner to acquire this art in five or ten minutes, and as considerable practice is necessary before he can be able to use it freely, he cannot commence too early with it. At first, he should take it up frequently at intervals of an hour or two, and not continue working with it for more than a quarter of an hour; he will soon, however, learn to keep up a continued blast without any difficulty, or distending his cheeks so much as to make it feel tiresome. It is necessary, indeed, to do so, only when he begins, as he will not otherwise be able to acquire the method of blowing speedily.

1362. During inspiration, the passages connecting the mouth with the lungs and the nostrils, are completely closed, and the blast kept up solely by the air, from the reservoir within the cheeks, from which it is pressed out by the contraction of the muscles, and the stock renewed at each successive expiration.”
461.

We must now take leave of Mr. Reid; and in doing so, express our hopes that his very valuable work will be appreciated by the lovers of chemistry, as it ought to be. It gives us much pleasure to hear that so many students of the Edinburgh School devote their attention to analytic pursuits; and trust that their example will be followed at the University of London, and at the King’s College. Much good has been expected from these rival institutions, and much may be done, if a proper system of practical education be vigorously pursued.

P. S.—After this sheet went to press, we received the second edition of the above valuable work, considerably improved. All the diagrams are renewed on an improved plan, and a full explanation of them is given in the Chapter on Chemical Equivalents. A number of wood-cuts are also added.

V.

ABRÉGÉ PRATIQUE DES MALADIES DE LA PEAU, D'APRÈS LES AUTEURS LES PLUS ESTIMÉS, ET SURTOUT D'APRÈS DES DOCUMENTS PUISÉS DANS LES LEÇONS CLINIQUE DE M. LE DOCTEUR BIETT, MéDECIN DE L'HÔPITAL ST. LOUIS. Par *Alphée Cazenave*, et *H. E. Schedel*, Docteurs en Médecine, Anciens Internes de l'Hôpital St. Louis, &c. A Paris, chez Béchet, Jeune, 1828.

THE practical object of classification in diseases, is, by their judicious assortment, and lucid arrangement into small groups, to facilitate their study, and by one common nomenclature founded on accurate and definite descriptions, to enable all to understand more intelligibly the same affection by the same term ;—its more philosophic design is to shew the affinities of the several diseases amongst themselves, and of the groups with each other, in order to lay down general rules for treatment, and to endeavour (as in natural science) to discover the general laws which influence morbid action. That classification can be alone correct which results from the careful observation of the symptoms of each disease during its whole course, the accurate examination of the changes discovered after death, the comparison of these among themselves, and the grouping together of those diseases which in all material points agree with each other. The proximate causes of diseases are so little understood that it is dangerous to build even a part of a classification on any theoretic explanation of them ; and on looking back to the various nosologies that have been produced, this reliance on theories rather than on facts, together with deficient pathological knowledge, will be found to have been fruitful sources of error. The *Nosologia Methodica* of Sauvages, published in 1762, was the first attempt of any magnitude at the general arrangement of diseases ;—it was a laborious production, the result of great personal experience as well as extensive reading. If morbid anatomy had then been cultivated with the zeal and success which has attended its more extended and useful cultivation of late years, Sauvages would hardly have placed hydrothorax in his class “*Anhelationes*,” and separated ophthalmia from the phlegmasiae, placing it in the 7th class “*Dolores*.” If Cullen had not left the safe path of accurate observation, and bent his facts to his peculiar theories, he would hardly have placed diarrhoea and diabetes under spasmi. Some physicians have objected to nosologies, but their objections can alone apply to those founded on theories. The advantages of a classification, the result of close and accurate observation, are exhibited in a strong light in the system of cutaneous diseases by Willan. Previously to the publication of his work no diseases were surrounded with so much obscurity and less understood ; which was the more surprising from their affording better opportunities of investigation than any other classes of morbid alterations, as both the senses of vision and touch can be immediately brought to bear on their elucidation. The different significations attached to the word “lepra” are examples of the obscurity and confusion arising from the loose and inaccurate definitions of the primary forms of eruptions which were the great obstacles to the attainment of any

clear knowledge of cutaneous diseases : thus, it has been applied to a tuberculous eruption, the elephantiasis of the Greeks ; to a chronic enlargement of the subcutaneous cellular tissue, the elephantiasis of the Arabs ; to a circular squamous disease, the lepra vulgaris ; and to a union of many eruptions, as eczema, psoriasis, and lichen. Willan founded his system on the primary forms of cutaneous diseases, and commenced by giving a precise definition of the forms he applied to them. His eight orders of Papulæ, Squamæ, Exanthemata, Bullæ, Vesiculæ, Pustulæ, Tubercula, and Maculæ, were so named from distinct elementary lesions, and subsequent experience has proved that, although some alterations can be beneficially made in the details, the general plan is, both as it regards facility of study and precision, the best that can be adopted. Alibert in France brought out his classification eight years subsequently to that of Willan ; it was founded on that of "mercuriali," in a work "De Morbis Cutaneis," &c. published at Venice in 1572. Alibert commences by dividing, first of all, cutaneous diseases into two groups, those of the head, ("teignes,") and those of the body, ("dartres,")—he subdivides these into species and varieties : thus, if there is a scaly eruption on the body, he names it "darte squammeuse ;" if it is attended with a serous exhalation, or is of a circular form, he adds to "darte squammeuse" either the term "humide" or "orbiculare," indicating the variety. Besides five species of "teignes" and seven "dartres," he separately describes "pliques, ephelides, cancroïdes, leprés, piens, ichyoses, syphilides, scrophules, psorides. Thus it has not the advantage of simplicity. The first divisions into eruptions affecting the skin of the head and those of the body is incorrect, as there is no species of eruption which has so special a seat that it can never be met with in other regions of the body with analogous characters ; another disadvantage is, that of giving the same name to eruptions differing entirely in their primary form, in their progress, and in the treatment they require, and which are only similar at a particular stage of the disease when superficially examined. Thus M. Alibert comprehends under "darte squammeuse humide," both some forms of eczema, a clearly vesicular affection, attended with the discharge of a fluid which forms yellowish scabs, and lichen agrius, a papular eruption which is attended with so much inflammation and painful tension, that in a later stage of the disease the summits of the papula ulcerate, and scabs are formed : now, in the first stage of lichen agrius it is neither "squammeuse" nor "humide," and must therefore be placed in another section. This classification, although almost unknown in this country, has had many disciples in Germany as well as in France. This was owing, in great measure, perhaps, to the magnificent and attractive folio work which M. Alibert has published, (and of which Dr. Bateman has rather too severely said, "that the merit of his publication belongs principally to the artists which he has had the good fortune to employ,") and to the opportunities the author of it has had of promulgating his opinions in his popular course of lectures delivered at the Hôpital St. Louis, for many years without a rival ; the apparent simplicity of the great primary division into two classes was a source of considerable attraction, libenter amplectuntur ea præcepta quæ sedilitatem non exigunt ; and the general terms "darte" and "teigne," although conveying no distinct meaning, were most readily applied, and afforded a convenient cloak for ignorance. Eleven years since M. Biett, a co-physician of M. Alibert's

at the Hôpital St. Louis, commenced a course of clinical lectures on cutaneous diseases, founded on the system of Willan and Bateman, which he slightly modified in a few non-essential details. Perhaps to those who may be unacquainted with the system of Paris hospitals, it will be as well to inform them that, unlike similar institutions in our own country, they are not the offspring of private munificence, but are wholly provided for by the government, which appoints a committee for their general superintendence: a tax which is taken at the barriers of Paris is applied to their maintenance. All invalids (except those who from severe accidents require immediate admission) first apply at a central office, where, after an examination, they are distributed to the various hospitals, but not indiscriminately, as some of these are set apart for peculiar diseases; thus the syphilitic patients are sent to the Hôpital des Venérins, children to the Hôpital des Infans, and those affected with cutaneous eruptions to the Hôpital St. Louis. This last hospital is of considerable extent, and Messrs. Alibert and Biett have each the care of nearly 100 beds, containing patients affected with skin diseases alone: as the out-patients are still more numerous, few institutions in the world can afford better opportunities for the study of a particular subject. To these advantages M. Biett adds that of a large private practice, the engagements of which, as well as a dislike, quite unusual among his countrymen, of publishing, are the causes of no work on a subject to which he has devoted his time, and powers of observation, having as yet proceeded from his pen. He has therefore found that his peculiar opinions have been borrowed from his lectures by many authors in a most wholesale manner, without acknowledgment. This was particularly the case in a work on skin diseases, published by a young physician of La Charité, named Rayer. Consequently two of M. Biett's former "internes," or house-surgeons, who had been in his wards several years, have brought out this work founded principally on his clinical observations and lectures, and therefore containing his opinions and modes of treatment. This volume is compiled throughout with that system which marks the later publications of the French medical press; the symptoms, causes, diagnosis, prognosis, and treatment, are given under separate heads in the description of each genus; and although the species and varieties do not agree "in toto" with those of Bateman, as they are less numerous, yet the names given by him, as well as by Alibert, are introduced where the form of the diseasee to which they have been applied is described. It will be the object of this review not to copy descriptions which have previously been accurately made by Willan and perfected by Bateman, in his admirable "Synopsis," but to point out the alterations and improvements in classification, description, and treatment which M. Biett has deduced from the most extensive experimental research. Numerous remedies which hitherto have been but little employed in this country, have had in his hospital a trial on a large scale, such as the iodurets of mercury, sulphur, &c. and it will be allowed that the efficacy of medicated and other baths may be estimated, when it is stated that 150,000 are given annually at the Hôpital St. Louis.

The eight orders of Willan are taken, but, instead of including all skin diseases under these heads, seven genera are omitted, as of an anomalous nature—these are lupus, purpura, pellagra, keloïde, syphilitic eruptions, and diseases of the sebaceous follicles; these are separately described.

EXANTHEMATA.

This name is given to acute inflammations of the skin, characterized by redness, which disappears during pressure, generally accompanied by constitutional symptoms; the classes are erythema, erysipelas, roseola, rubeola, scarlatina, and urticaria. The definition of Willan agrees with this; but he adds that the redness is sometimes attended with partial extravasation, and he admits purpura; this is placed by M. Biett among the anomalous orders, and the reasons for the alteration will be given where the disease is described.

Erysipelas. Willan places this among bullæ; but, as the vesications are considered by M. Biett to be complications, the agreement of the other symptoms with exanthemata induces him to place it under this order. This agrees with the opinion of Mr. Lawrence, who thinks that erysipelas should not be separated from erythema, but that it should follow it, in a natural nosology (*Medico-Chirurgical Transactions, vol. XIV. p. 36*). Of erysipelas, which they define as a non-contagious exanthema, characterized by a deep red colour of a considerable portion of the skin, with heat and tumefaction of this membrane, as well as of the subcutaneous cellular tissue, two species are admitted—1, True; and, 2, Phlegmonous erysipelas, as these agree with the E. simplex and phlegmonosum of Lawrence, which have been minutely described by that author, and reviewed in a former Number of this Journal, we shall not again detail them. M. Biett does not even go so far as Mr. Lawrence in recommending tonics or stimulants in any cases; the treatment to be pursued is to be strictly antiphlogistic. In true erysipelas of small extent, unaccompanied by general symptoms, low diet, with diluent drinks and lotions of Goulard water, are sufficient. Where the extent of the inflammation is greater, and the general symptoms are severe, with inflammatory fever, particularly where the individual is young and plethoric, blood is to be taken from the arm as often as the symptoms require it. When the pulse loses its strength, local bleedings are to be substituted. It is also serviceable to employ simultaneously local and general bleedings, taking care to take blood only from the neighbourhood of the inflamed surface, never from that itself. Where the patients are debilitated and aged, great caution must be employed in using any of these remedies. Laxatives and mild purgatives are to be employed; more drastic purgatives and emetics are not to be given if there is much fever, dryness of the skin, heat in the epigastrium, with great thirst. Blisters should never be employed, except to fix the erratic erysipelas, and to recall the eruption if it suddenly disappears. This is contrary to the opinion of Baron Dupuytren, who applies blisters to the inflamed surfaces in all cases of erysipelas; considering the disease to be an effort of Nature to throw out a morbid matter, he endeavours to assist Nature, by producing an artificial crisis by vesications; he has found this treatment particularly successful in erratic erysipelas, which never forms bullæ.

The other exanthematous diseases are correctly described; but, as the divisions are similar to Willan's, and the treatment the same as is followed in this country, we shall pass to the next order.

VESICULÆ.

M. Biett admits five classes—varicella and miliaria, which are essentially acute diseases ; eczema, herpes, and scabies, which are most frequently chronic. This division is important, as it regards the treatment, the two former requiring, in general, only a simple antiphlogistic regimen, the three latter are more obstinate, often demanding very energetic remedies. Willan adds vaccinia and rupia. M. Biett considers that the former may be more conveniently classed with pustules, and that the latter is a “ bulla.”

Eczema. This is an eruption of very small vesicles, agglomerated in large numbers, and usually occupying extensive, irregular, uncircumscribed surfaces. M. Biett has been in the habit of dividing, in his lectures; eczema into acute and chronic.

1. *Acute Eczema.* This comprehends (1) *Eczema simplex* ; (2) *E. rubrum* ; (3) *E. impetiginodes*.

(1). *Eczema Simplex.* This consists of extremely small vesicles, situated closely together, and developed without any areolar inflammation, on a surface, the colour of which does not differ from that of the surrounding skin ; the vesicles are transparent and brilliant, they are formed without any pre-cursory symptom, the patient finds a slight itching, and is surprised to see a numerous crop of vesicles ; the small drop of serum they contain becomes disturbed and milky, it is absorbed, the vesicle dries up and desquamates. This eruption does not produce those inflamed surfaces, that exhalation of serosity and constant renewal of scales which are observed in the other varieties. Its progress is slow, and the successive eruption of new vesicles extends its duration generally to two or three weeks, sometimes more. It may be general, but more frequently it is circumscribed, and confined to parts of the arm and fore-arm, or between the fingers, where it may be mistaken for itch. Young people and women are most subject to this slight eruption ; it can frequently be traced to arise from the direct application of irritants, as heat, medicated ointments, &c.

Acute eczema is, in the greater number of cases, a more severe complaint than *E. simplex*, and this more acute form has two well-marked degrees of intensity, namely, *E. rubrum* and *E. impetiginodes*.

(2). *E. Rubrum.* This eruption is preceded and accompanied by heat and tension ; the skin is inflamed and of a bright red colour. If it is closely examined, it appears to be studded with small silvery eminences ; these are the commencement of vesicles, which, in a short time, acquire their full size, and appear about the size and form of the head of a small pin, with a well-marked inflammatory areola. From the 6th to the 8th day, sometimes before, the redness diminishes, the fluid is absorbed, the vesicles dry up, and the disease terminates by a slight exfoliation, produced by the “debris” of the vesicles. On examining the eruption at this period, it presents some characteristic marks, the surface is of a reddish colour (which remains for some days after the cure), covered with small round points ; each of these is exactly surrounded by a whitish border, indicating the line of demarcation between the portion of epidermis, which was raised, and the areola which surrounded its base. At other times, the termination of *E. rubrum* is not

so simple ; the inflammation, instead of diminishing, persists, or even augments, the vesicles become confluent, break, and allow the fluid they contain to escape—this, flowing over an already inflamed surface, irritates it more, and causes superficial excoriations, which pour out a serous liquid ; this thickens, and forms thin and soft lamellæ, often of considerable size, which are frequently renewed. The serous exhalation gradually ceases, and the healing process proceeds from the circumference to the centre, the disease terminating in two or three weeks. Frequently the eruption, instead of gradually improving, goes into a chronic state.

(3). *Eczema Impetiginodes.* In the earliest stage, the vesicles are similar to those of *E. rubrum*, but the inflammation is more acute, the skin is tumefied, the liquid contained in the vesicles loses its transparency, and becomes sero-purulent. These pustular vesicles, agglomerated and confluent, burst, the liquid concretes, and forms, not lamellæ, as in *E. rubrum*, but yellow, soft scales, composed of numerous thin layers, sometimes very large. These fall, and expose a crimson surface, from which a reddish fluid is poured out, and new scales are formed, which follow a similar course to the former ones ; at length the inflammation diminishes, the pustular vesicles cease to be produced, the scales become thinner, the surfaces beneath them are less red, and the skin is gradually restored to its healthy state. This eruption may continue two or three weeks ; it may be confined to a single spot, or cover the whole cutaneous surface, accompanied by severe general symptoms ; when this is the case, the vesicles can often be seen in their various stages. When *E. impetiginodes* is confined to a single spot, a careful examination will detect the vesicles of *E. rubrum* around the vesiculo-pustular eruption, and in the centre of it. *E. impetiginodes* may pass into the chronic state, which does not differ from the chronic form of eczema rubrum. It must be clearly understood that *E. impetiginodes* is not *E. rubrum* complicated with pustules of impetigo, but an eruption of vesicles, at first transparent, which do not change into true pustules, but into pustular vesicles—otherwise the disease would be a true impetigo. Sometimes, indeed, the inflammation is so acute, that pustules of impetigo and of ecthyma are complicated with this eruption ; but they are readily distinguished from it by their containing pus from the commencement, and from their larger size.

2. *Chronic Eczema.* This is the latter stage of the more acute forms of eczema. The skin, constantly irritated by the presence of an ichorous fluid, and by the successive eruptions of vesicles, instead of returning to its natural state, inflames very deeply, becomes excoriated and fissured, especially near the articulations ; the constant exhalation of serosity is so abundant, that the linen covering the part is speedily soiled, and great care must be taken in removing it, lest the tender skin is torn, causing considerable haemorrhage ; the surface is tumefied and softened, so that the impression of the covering is often left upon it. In other cases, after a certain time, the fluid is exhaled in less abundance—it thickens and forms thin, soft, yellow lamellæ, slightly adherent, often of considerable size, leaving beneath them, after their fall, a surface inflamed and but slightly tumid. These lamellæ are formed more slowly, they are more dry, and the disease seems on the point of being cured, when, without any known cause, the inflammation commences with fresh violence ; the surfaces begin again to grow red, they are covered again with vesicles, which speedily break, and the disease fol-

lows the same progress which has been pointed out: this disease may last many years, with similar exacerbations. Finally, in some cases, all serous exhalation ceases, the scales become more dry, less yellow, and more adherent, the skin is red, thickened, and is marked with deep fissures. In this state, the eczema resembles some forms of psoriasis, a true squamous eruption, and the more so as the scales appear to be lamellæ of an altered epidermis, not the concretion of an exhaled fluid. Thus some cases of eczema become real scaly diseases, and the vesicular character returns, in proportion to their progress towards a complete cure. In some cases, especially on the limbs, there remains one or two small spots of skin, thin, smooth and shining; they are covered with whitish, and very small scales, similar to epidermis; no vesicle can be seen on these patches, and the diagnosis becomes very difficult, unless a new eruption over the surface, or some small vesicles around the circumference point out the nature of the eruption. Chronic eczema, at first occupying but a small surface, may extend very considerably; in some rare cases this eruption, which was at first no larger than a five shilling piece, has been known gradually to cover a whole limb. Every form of chronic eczema is attended with most severe itching, frequently more difficult to bear than acute pain. Whatever may be the courage of the patient he cannot resist the unconquerable desire he has of scratching the part, which only increases the symptom. The itching becomes intolerable and the cause of severe anguish, when the eruption occupies the upper and inner parts of the thighs, (in women often accompanied by a chronic discharge from the vagina) and extending around the vulva and anus. After an indefinite space of time, the itching becomes less, the serous exhalation diminishes gradually, and at length ceases; the scales are more dry, the skin less inflamed, the circumference is the first cured, the lamellæ become thinner and smaller until they cease to be formed, the skin remains for some little time after the eruption has disappeared, rather redder and smoother than natural, but is eventually restored to its natural state. The duration of this eruption is indefinite; it may remain many months or even years.

Eczema may arise on any part of the surface of the body, but its more frequent situation is on that part of the skin which is furnished with hairs and numerous follicles, as the pubis, groins, scrotum, &c. In some cases it is confined to a single point, as the breast, the hairy scalp, the ears, the scrotum, constituting local varieties of considerable practical importance; but most frequently it appears on many parts at the same time, so as sometimes to occupy the whole surface of the body simultaneously. Eczema is not contagious; but, in a few cases it has been communicated by the prolonged contact of two mucous surfaces during coition. It attacks adults, and women more frequently than men. The causes are in many cases not discoverable; in others they are easily traced; thus it is often the result of the heat of a large fire or of the rays of the sun (*E. solare*—Willan); it follows the application of a blister, or of frictions, particularly with irritating ointments, as mercurial ointment. This has been called eczema mercuriale, but it differs from neither of the other forms. It is often produced by the excessive use of ardent spirits; and in those individuals who work in the sugar refiners' manufactories eczema frequently follows a burn. Whatever may have been the causes which produced eczema, its chronic state and its duration generally for a long period must be attributed to a peculiar constitutional dispo-

sition. The handling of metals, the contact of powdery substances, &c. are the causes frequently of eczema of the hands (grocers' itch).

Diagnosis. This is of very considerable importance. Eczema simplex has often been mistaken for the itch, with which it agrees in being developed without inflammation, in affecting certain parts, as the wrist and lateral parts of the fingers, and in causing severe itching; but the vesicles of eczema are flattened, those of itch are acuminate; those of eczema are always agglomerated, in itch they are in general isolated or altogether distinct, or but one or two vesicles are observed in a surface of some extent, as between two fingers, which is never the case in eczema. The itching of eczema is a kind of smarting very different from the exacerbations of itching in the itch, in the former case it is truly painful, whilst in the latter it is a sensation "plutôt agréable que pénible"! Finally, the itch is contagious, eczema is not generally so. Eczema rubrum may be confounded with miliaria, but in this latter eruption the vesicles are never confluent as in the former, or confined to a small space, they are on the contrary in an innumerable quantity; they are more voluminous in miliaria; the severe general symptoms which accompany symptomatic miliaria, sufficiently distinguish this affection from eczema. That variety of miliaria which appears in individuals who have taken severe exercise during the excessive heat of Summer resembles eczema considerably, but the vesicles are more universal, the sweats are most abundant, and the termination of the eruption more speedy than in eczema. Eczema impetiginodes differs from impetigo by well marked characters. The vesicular eruption covers large surfaces, impetigo is most frequently confined to a small space. The pustules of impetigo never contain even at their commencement a transparent serum, their base is larger and the fluid they contain is thicker. The pustular vesicles of eczema impetiginodes are always vesicular at their commencement, they never contain true pus but a yellowish serosity, a sero-purulent liquid. In impetigo the pustules produce true scabs, which are thick, more or less yellow, ragged, unequal, like shagreen; whilst the pustular vesicles of eczema only form thin scales, of greater extent than thickness, and around them vesicles of eczema rubrum are always seen, which never is the case in impetigo. When the vesicles of itch are mixed with pustules (which are in the greater number of cases a complication) this eruption may be confounded with eczema impetiginodes, unless the vesicles themselves which always exist in large numbers are not carefully examined according to the diagnostic marks stated above. The diagnosis of chronic eczema is often much more difficult. In lichen agrius there is an exhalation of serosity which forms scales, but these scales are smaller, thicker, and more yellow than those of eczema, approaching more nearly the nature of scabs; if they fall they expose, not a red, smooth, shining, and slightly excoriated surface as in eczema, but a surface irregular from a number of small prominent points (papula) generally appreciable to the eye, and constantly to the finger gently drawn over the seat of the eruption. At other times, as in chronic eczema, the lichen produces thin dry scales without any appreciable serosity and local inflammation, but then the skin is much thicker and ragged than in eczema. In lichen some few papulae are constantly found near the eruption, easily recognised by their hardness and chronic progress, whilst vesicles are seen near the patches of eczema. It

requires great attention to distinguish these two eruptions on the hands. Some varieties of chronic eczema may be mistaken for psoriasis; but they differ from it in the constant presence of vesicles in the neighbourhood of the eruption and in the scales which are less dry and less friable. In that form of chronic eczema in which at a late stage the skin is red and covered with small whitish scales, the diagnosis is much more difficult, particularly if the physician has not watched the progress of the disease; but the appearance of the skin is different in the two affections; in eczema it is not elevated or in a state of hypertrophy as in psoriasis, neither is it marked with fissures in every direction as in psoriasis inveterata, but they are in relation to the muscular motions of the part.

Prognosis. Eczema, particularly the acute form, is generally a mild eruption, but when it becomes chronic and occupies a considerable surface, it is a very troublesome disorder. The prognosis is more unfavourable when the eruption has existed many years, and new crops of vesicles form when a cure is expected. Without endangering the life of the patients it embitters their existence.

Treatment. In the slight forms of eczema simplex a mild diet, lemonade for a beverage, and the local application of warm water is sufficient; when the eruption is prolonged, and of greater extent, attended with severe itching, laxative drinks must be given and alkaline or sulphur baths employed. The alkaline baths are made by dissolving in the bath from four to eight ounces of subcarbonate of potash or of soda, according to the age of the patient and the stage of the eruption: and in a sulphur bath, four ounces of sulphuret of potash are to be dissolved. If eczema rubrum and impetigo-nodes occupy but a small surface, the patient must be put on low diet with diluent drinks; if they are of greater extent, and the constitution sympathises, especially if the patient is young and vigorous, either a general or local bleeding, by means of leeches, in the vicinity of the eruption, must be resorted to, with simple and emollient baths; or local mucilaginous baths and potato cataplasms, if the vesicles have broken, and have left the surface red, excoriated, and painful; applications containing sulphur or mercury are to be avoided as likely to increase the irritation. In all cases it is obvious that the irritating causes must first be removed. Chronic eczema, when not very far advanced, often yields to the following treatment: acidulated drinks and baths are the remedies most generally employed. Half a drachm to a drachm of nitric or sulphuric acid is to be mixed with a pint of barley water, and drank at intervals in small quantities, a small cup of cold water being taken after each dose of the acid at first until the stomach becomes accustomed to it. This is particularly beneficial where there is great discharge of serum from the surface of the eruption with intense itching. Nitric acid is more energetic than the sulphuric. The heat of the baths should be from 25° to 27° (Réaumer), the patient should remain in them about an hour daily; they are rendered emollient by the addition of mucilage and of gelatine—a pound and a half of gelatine is necessary for a single bath. Laxative drinks are frequently useful, as a pint of whey, in which two drachms of acidulated tartrate of potash has been dissolved, or half an ounce of sulphate of soda or potash mixed with a pint of veal broth, &c. Alkaline remedies are very

serviceable when, notwithstanding the use of emollients, the itching continues unabated; the alkaline bath should be taken before going to bed. From half a drachm to a drachm of subcarbonate of potash may be daily administered internally. When the eruption is of longer standing and occupies a more extended surface, more active remedies must be employed, such as purgatives, sulphur baths, and vapour baths. The purgatives to be employed are calomel, Plummer's pill, aloes, jalap, gamboge, and Seidlitz water. Sulphureous waters can be taken internally as well as applied externally; they are only suitable when the disease has existed for a very considerable time, and when the eruption affecting the lower limbs is of a violet colour. The waters of Barèges, of Enghien, and of Cauteretz are the most usually employed; they can be produced artificially, by adding to a simple bath two or three ounces of sulphuret of potash, varying the quantity according to the excitement which is desired to be produced; in all cases it is proper to use alternately simple warm baths with sulphur baths. When these waters are administered internally they should be diluted at first with two thirds barley water or milk, and this should be gradually diminished until the patient can take the medicine in its undiluted form. Vapour baths are sometimes very useful, but care should be taken that the patient does not expose himself to very hot vapour. When the disease is local, a stream of vapour directed on the part (*les douches de vapeur*) is often very serviceable. If the extent of the eruption is much reduced, its cure is hastened by gently rubbing the part with an ointment composed of a scruple or half a drachm of the ammoniated protochloride of mercury and an ounce of lard. In the course of the treatment intense itching is relieved by the application of lotions containing superacetate of lead, emulsion of bitter almonds, or decoctions of dulcamara, hyoscyamus, &c. In more obstinate cases energetic remedies must be employed, provided there is no chronic affection of the stomach or intestines, such as tincture of cantharides, commencing with a dose of three drops every morning, then five drops, and augmenting it five drops every six or eight days until each dose contains twenty-five or thirty drops, and arsenical preparations, small doses of which are to be continued for a month or six weeks. In the scaly form of eczema, when local, particularly when occupying the hands, the following applications are useful. Ointments, composed of protonitrate of mercury, 3*j.* to an ounce of lard; or, of protioduret of mercury, 3*j.* or so, or twelve grains of the deutoioduret of mercury to the same quantity of lard; a little camphor may be added to appease the itchings; the advantages of the internal use of mercury are at least doubtful, sometimes it is injurious.

Among the local varieties it is of importance to mention, eczema of the hairy scalp. In some cases it occupies this part alone, but most usually part of the face also. The exhalation of a fluid is so profuse that the hairs are at first soaked in it; the serum dries and forms whitish scales which cover and connect the hairs separately in small bundles of five or six hairs each; from this circumstance and the colour of the scales Alibert has termed it *teigne amiantacée*. When the exhalation is less abundant the scales are smaller, dry, and furfuraceous, quickly renewed, falling off in great abundance if the slightest friction is used; this is the *teigne furfuracée* of Alibert, and may be confounded with pityriasis capitis. The bulb of the hair is not diseased in either of these affections, and they require a simple and mild treatment, such

as slight laxatives, emollient washes at the commencement, and alkaline lotions, when the eruption is farther advanced. By those who do not pay sufficient attention to primary forms of eruptions, this has been confounded with porrigo; but the diagnosis is simple and of the highest importance. As eczema is one of the most frequent, and in its chronic form, one of the most tedious, cutaneous eruptions, we have given a lengthened and detailed description of it, particularly as M. Biett has paid especial attention both to its diagnosis and treatment, which, together with the division which he has adopted, into acute and chronic, are of much practical value. The Synopsis of Bateman, which cannot be too highly praised for the correct and classical descriptions which it contains, and the medical learning and research which it exhibits, is often deficient in diagnosis; this point has been carefully supplied by our authors, and we shall make much use of it.

Herpes. This is divided into, 1, Herpes phlyctenodes, having two varieties—*H. præputialis* and *labialis*—2, *H. zoster*—3, *H. circinatus*—4, *H. iris*. Neither the description of these forms, nor their mode of treatment, differs from that given by Bateman.

Scabies. M. Biett considers this to be a decidedly vesicular disease, and classes it under this order. Bateman says, "that from its affinity with pustules, vesicles, and papulæ, it almost bids defiance to an artificial classification;" and, without any sufficient reason, he follows Willan, and classes it among pustulæ, although two of its varieties, *S. papuliformis* and *S. lymphatica*, are truly vesicular, and much more frequent than *S. purulenta*, a comparatively rare form of the eruption. The term *S. papuliformis*, which Bateman applies to his first variety, is indefinite, as the eruption consists of "minute itching vesicles" (*Bateman's Synopsis*, p. 163, 6th ed.), resembling papules only when carelessly examined, it is objectionable, as liable to confuse the student, who should constantly bear in mind the distinct vesicular nature of scabies, in contra-distinction to the papulæ of lichen and prurigo, which are often mistaken for it.

The itch is a contagious eruption. In infants, it is developed four or five days after exposure to contagious influence; if they are very feeble, a few days longer—if very strong and robust, not more than two days intervene; in adults, from eight to ten days in the Spring and Summer—from fifteen to twenty in the Winter; it is longer in old men, whose skin is more dry and hard.

Symptoms. A slight itching is first felt in the parts which have been exposed to the contagious contact, increasing by the warmth of the bed, or by heating foods; accumulated transparent vesicles form, of a light rosy hue, in young subjects, containing a serous and viscid liquid. If the patient is weak, their progress is slow, and vice versa. The eruption appears in the flexures of the joints, as at the wrist, between the fingers, in the bend of the arm, arm-pit, hams, &c. and, later, on the belly. It may occupy the whole cutaneous surface, with the exception of the face; but more often it is less extensive. In some cases, the number of vesicles is very few, and they are scattered; if they are numerous, the itching is so insupportable that they are destroyed by scratching, the liquid escapes, and the vesicles are re-placed by numerous

red and often inflamed points, and thin, yellowish scales. If the patient is young, vigorous, and of a sanguine temperament, the action of the nails may so augment the inflammation, that the eruption becomes complicated with pustules of impetigo and ecthyma. In some few cases, the vesicles have become pustular.

Although M. Biett has employed, at various times, the strongest microscopes in investigating this eruption, he has never been able to discover the insect, which various writers have described with minuteness, and of which M. Gales, in 1812, stated that he had collected upwards of 300, and was enabled to ascertain their mode of generation, laying eggs, &c. ! M. Biett believes that they do not exist; it would be more charitable to these writers to consider with Bateman, who was unable to discover these insects, that the production of acari, in scabies, is a rare and *casual* circumstance.

Diagnosis. It is hardly necessary to mention the importance of accurately distinguishing this disease, both for the comfort of whole families and the reputation of the medical practitioner. It is often confounded with prurigo; but, independently of the distinct primitive characters, the former vesicular, the latter papular, scabies is found in the flexures of the joints, whilst prurigo occupies the opposite surface, "dans le sens d'extension." In prurigo, the summit of the papulae, which are almost always destroyed by scratching, has a small, dry clot of blood, black, or nearly black; the broken vesicles of itch are covered by a small, thin, yellowish scale; in prurigo, the itching is more severe and burning, and the eruption is not contagious. Lichen simplex may sometimes be mistaken for scabies; but, on examination, it will be found to consist of papulae, generally very close together, which is never observed in the itch; these papulae are of the colour of the skin, whilst the vesicles of itch are slightly rosy; when lichen affects the hands, it is found on their backs, not between the fingers; the itching is slight, the eruption is not contagious. The vesicles of eczema are flattened, of scabies acuminate; in eczema they are agglomerated, in scabies generally distinct; the itching of eczema is a general smarting, very different from the exacerbations in itch. Eczema is non-contagious. Scabies may be complicated with eczema; this is often the effect of the irritating applications of quacks; also with the pustules of impetigo and ecthyma, which appear on those parts where the vesicles exist in great numbers; and these are the cases which have been called pustular itch (scabies purulenta). If the inflammation increases, it may affect the cellular membrane, and these pustules may be complicated with boils. In some few cases, it exists simultaneously with lichen.

Prognosis. Scabies never terminates spontaneously; abandoned to itself, it may remain many years, or a whole life. Under a rational treatment, its duration varies from ten days to one or many months, according to its complications.

Treatment. M. Biett has found the following remedies to succeed most constantly and promptly, without causing, from irritation, other eruptions. Half an ounce of an ointment, composed of two parts of sublimated sulphur, one part of subcarbonate of potash, and eight parts of lard, is to be rubbed

over the parts affected with the eruption night and morning; a warm bath is to be used every day, or at least every other day. The average length of this treatment is twelve days. For young children, sulphur baths and ablution with soap and water are alone necessary. Sulphur baths and fumigations are useful auxiliaries, but the cure is tedious (from 25 to 33 days) if they are alone employed. The "lotion of Dupuytren" is conveniently employed, in those cases in which the patients do not like frictions with ointment; but it does not suit irritable skins. It consists of four ounces of sulphuret of potash, half an ounce of sulphuric acid, and a pint and a half of water; sixteen days is the average length of time required for a cure. In recent and mild cases, the powder of pynovel, which is powdered sulphuret of lime, is serviceable; half a drachm of the powder, moistened with a little oil, is to be rubbed over the eruption night and morning. The cure is effected in about 15 days. If the itch is complicated with eczema, the sulphur applications must not be employed, but diluent and slightly acidulated drinks must be substituted. If there are pustules of impetigo or ecthyma, the use of any irritating application must be discontinued; the simple warm bath and gently laxative drinks are useful, and it is advantageous to soak the hands and fore-arms, which are often the seat of the eruption, in local emollient baths. In all cases, the linen should be frequently changed.

Bullæ. The two varieties of this order are pemphigus and rupia. Pemphigus consists of an eruption of bullæ, of variable size, on different parts of the body, containing a liquid, at first serous, subsequently reddish; they are usually distinct, but numerous, succeeded by thin crusts and superficial excoriations. There are two forms, the acute and the chronic.

(1). *Acute Pemphigus.* The eruption is preceded, during 24 or 48 hours, by symptoms of fever, or, in milder cases, by a general feeling of malaise. Circular patches of a red colour are seen, distinct, small, and numerous, generally scattered over a large extent of the surface of the body; on these, bullæ are speedily formed; when they cover the whole inflamed surface, they have the appearance of small, isolated, transparent tumours, from the size of a pea to that of a nut; but when they only occupy the middle of the inflamed spot, there is a red areola surrounding each. In some cases, bullæ do not form on all the erythematous patches, but they are speedily produced on rubbing the part. After some days they open, and are replaced by thin, brown crusts, or little dry whitish lamellæ. Sometimes the attendant general symptoms are very slight. The duration of the disease is from one to three weeks. Dr. Willan denied the existence of an eruption of bullæ with fever, to which the older writers had applied the term pemphysis; and defined pompholyx as "an eruption of bullæ, without any inflammation around them, and without fever." The pompholyx diutinus of Willan, answers to the chronic pemphigus of Biett. It is more common than the acute form, and is confined to adults and elderly people. Feverish symptoms are not observed unless the eruption is very extensive, and prolonged by successive crops of bullæ. It is preceded by lassitude and pains in the limbs; numerous red points first appear, attended with a tingling sensation; the epidermis becomes raised by a serous fluid, forming, in a few hours, irregular bullæ, as large as a nut or a walnut; these, in a few days, increase to the size of an egg or larger; they break, and discharge a lemon-coloured serosity, and the

epidermis, relaxed and wrinkled, is partially detached, exposing an excoriated painful, and red surface; towards the third or fourth day, the liquid, in the bullæ which have not burst, becomes reddish, the vesications subside, and small, brownish, thin, and flattened scabs, are formed. New bullæ are formed near the older ones, and they go through the same stages. In some rare cases, the whole surface of the body is covered with the bullæ, which become confluent. The eruption continues from one, two, or three weeks to many months or years. It most frequently attacks old people, who have been debilitated by the effects of bad and scanty diet, damp situations, &c.

Diagnosis. From rupia simplex, by the bullæ in this affection being few in number, and followed by true ulcerations and thick prominent scabs. In ecthyma, the epidermis is sometimes raised so considerably by pus, as to be mistaken for a bulla, but the contents are purulent, not serous. When the bullæ of pemphigus are of small size, and near together, it resembles herpes phlyctenodes; but distinct bullæ in other parts, and their size being more considerable than that of vesicles where close together, mark the difference. The bullæ on an erysipelatous surface are accidental productions. The scabs of pemphigus may be confounded with those of impetigo; but, in the former eruption, they often cover the body, or nearly so; in the latter, they are generally confined to a smaller surface. The scabs of impetigo are rough, thick, and irregular; those of pemphigus thin, often convex in the centre, and the shape of the large bullæ.

Prognosis. The acute form is a mild disease, and terminates favourably; the chronic always indicates a bad state of the constitution, and is dangerous, if the eruption is very extensive, and occurring in individuals weakened by old age, misery, or debauchery.

Treatment. In acute pemphigus, strict diet, diluent drinks and rest are sufficient, unless inflammatory symptoms exist; in such cases, tepid baths, bleeding from the arm, or leeches to the anus are required. Chronic pemphigus requires a cautious antiphlogistic treatment, diluent and acidulated drinks, tepid baths, and, in a later stage, alkaline baths; if there is much pain, soothing applications, and opiates administered internally; bleeding will be required, if there are symptoms of inflammation of the lungs, or any internal organ. If, notwithstanding the use of such remedies, new crops of eruption appear, the strength of the patient must be restored by good nourishment, wine, acids, and quinine, &c. with preparations of iron and other tonics; this change of treatment is of advantage, even in young subjects.

Rupia. Biett has differed from Bateman, who placed this eruption under vesiculae. It is defined as an eruption of bullæ more or less voluminous, isolated, flattened, filled with a fluid sometimes serous, sometimes purulent or blackish, succeeded by thick scabs and ulcerations. It is divided, according to Bateman's classification, into R. simplex, prominens, and escharotica. The ulcerations frequently heal slowly, and it is recommended to quicken the process of cicatrization, by the gentle application of nitrate of silver; in some cases, it becomes indispensably necessary to modify the diseased surface by means of active caustics, such as the repeated and lengthened application of

nitrate of silver, or of lotions of nitric or muriatic acid; in some cases the concentrated acid is necessary. M. Biett has found an ointment composed of one scruple of the proto-ioduret of mercury, or of twelve to fifteen grains of the deuto-ioduret to an ounce of lard, very efficacious.

PUSTULÆ.

Impetigo. This is characterized by an eruption of psydacious pustules generally situated closely together, and forming thick, rugose, and yellowish scabs. From the form these pustules assume, it is divided into impetigo figurata, having a determined form, either round or oval, and I. sparsa, in which the pustules are irregularly disseminated. The impetigo scabida of Willan is that state of impetigo figurata in which the scabs have acquired a considerable thickness. The description of these forms given by Bateman is not excelled by our authors.

Diagnosis. The psydacious pustules forming thick, ragged, yellowish scabs, distinguishes the eruption from the vesicular or pustulo-vesicular eczema which forms thin scaly lamellæ. When impetigo is situated on the chin it is likely to be confounded with sycosis, but in impetigo the pustules are small, yellow, and close together, the scabs of a thick transparent, yellowish green; there are neither callous elevations, or tubercles; the pustules of sycosis are larger, less yellow, isolated, more elevated than those of impetigo, the discharge is much less abundant, and the scabs are drier and of a deeper colour. The distinct pustules of porrigo, "let into" (endrâssé) the epidermis forming speedily a yellow and dry scab, of a cup shape, as well as the contagious nature of the eruption and the loss of hair which accompanies it, and which never follows impetigo, distinguish porrigo favosa and scutulata from any impetiginous eruption.

Treatment. When the eruption is slight, emollient lotions with decoction of poppies, tepid milk, almond emulsion, &c. and cooling drinks, are sufficient; if it is more extensive with general symptoms, bleeding either local or general, and tepid baths; towards the end of the disease, and particularly when it is obstinate, vapour and douche baths, together with active purgatives of calomel, jalap, Epsom salts, &c. or acidulated drinks, with alkaline alternated with acid baths, or a lotion composed of medicinal hydrocyanic acid, ʒij. vel. ʒijj. alcohol, ʒss. distilled water, ʒvijj.; previously to the employment of these applications it is necessary to cleanse the surface from the scabs. When the eruption becomes chronic, sulphur taken internally, and applied externally by means of baths, is very beneficial. In those cases which have resisted all other means of treatment, a strong solution of nitrate of silver or an acid has been applied to the diseased surface, and immediately washed off, so as to prevent the too great action of the caustic. In such cases the internal employment of small doses of arsenic is of signal service.

Acne. A chronic pustular affection, consisting of an eruption of small, isolated pustules, of a deep red colour, having a base more or less hard, and frequently forming after the disappearance of the pustules, small, hard, red,

circumscribed, indolent tumours. It will be seen by this definition that the tubercles which were regarded by Willan as the elementary lesion are here considered to be the termination of pustules. Acne punctata, which is admitted by Willan, certainly does not agree with his definition of acne; it is omitted by M. Biett, who considers it only as a frequent complication. The division into A. simplex, indurata, and rosacea, is adopted. The descriptions of this well-known eruption do not differ materially from those by Bateman; but as there are some peculiarities in the mode of treatment, we shall mention them; few cutaneous diseases being more troublesome from their obstinacy in resisting medical aid, and more annoying from their affecting those parts which are most exposed at an age when the "cura cultus sui" is considered of much importance. When there is a considerable crop of pustules of acne simplex, or indurata, a general bleeding, low diet, with abstinence from spirits, wine, &c. is necessary; to produce an absorption of the tubercles, lotions of rose-water and alcohol should be employed, their strength depending on the state of the pustules, and the quantity of irritation which is required to be produced, or a lotion containing five or six grains of oxymuriate of mercury, an ounce of alcohol, and half a pint of distilled water; frictions also are very useful, with an ointment composed of the ammoniated protocchloride of mercury, 2j. to 3j. lard, 3j. But of all the preparations which M. Biett has employed, he has found none more useful in producing the absorption of these tubercles than the ioduret of sulphur ointment, (ioduret of sulphur, gr. xij. vel. gr. xxiv. lard, 3j. Baths, and particularly douche baths, of the vapour of hot water, directed on the face for twelve or twenty minutes daily, assist the action of the other remedies. Purgatives are hurtful. The sulphur waters of Barèges, Enghien, &c. are useful, both taken internally and employed externally. In acne rosacea, these local applications are generally useless, often prejudicial; great attention to the state of the general health is alone required; excesses at the table, wine and spirits, are to be avoided; the habits of the patient must be sober and regular; a mild diet habitually composed of white meats, fresh vegetables, cooling succulent fruits, must be persisted in, and constant care taken to avoid fatiguing exercises of all kinds, confinement to the house, or in warm rooms near a fire, mental anxiety, &c.

Sycosis or "Mentagre." This, like acne, is considered by Biett to be pustular in the first instance, and to be tubercular consecutively. Its seat is principally the chin, upper lip, and occasionally the lateral parts of the jaw over the masseters. It commences by distinct, accumulated, psydriaceous pustules; in six or seven days these burst, and brownish scabs are formed, or if the subject is young and vigorous, one large scab. The centre of each pustule will be found to be occupied by a hair. In many cases, particularly in weak and feeble individuals, as the pustules decline, their base becomes hard, red, and tumefied, complete resolution not having taken place; from this tubercular appearance sycosis has been mistaken for an originally tubercular disease. The summits of these elevations may subsequently become ulcerated. Its duration is very variable; in many individuals it is very obstinate and subject to return.

Diagnosis. The pustules of impetigo figurata are flattened, and hardly

elevated above the level of the skin; they are in groups, and their progress is acute: in sycosis the pustules are acuminate, elevated above the level of the skin, generally isolated and distinct. The pustules of impetigo open about the third or fourth day, and the fluid that escapes forms bright yellow, thick and large scabs; the pustules of sycosis do not burst until the 5th or 7th day, and the scabs are of a deep brown colour, much thinner, and drier, than those of impetigo. The pustules of ecthyma are larger, and their base more inflamed, than those of sycosis; the size of the scabs is also greater, they are thicker, and more adherent, and not followed by tubercular indurations. Syphilitic pustules are distinguished from sycosis by the absence of heat and pain; their base is copper-coloured and violet, they are rarely found on the inferior part of the face, but rather on the alæ nasi, forehead, and commissure of the lips. Syphilitic tubercles are of a shining, and of a dull copper colour, appearing to affect the superficial layers of the skin, whilst the conoidal tubercles of sycosis are deeply implanted in it.

Treatment. In the first place the cause is to be removed. The beard is to be cut with scissors, not with a razor; repeated applications of leeches behind the ears, and below the jaw; emollient fomentations and poultices of bread or potatoe, and purgatives with low diet in the first instance. When the disease has lasted some time, and the tubercles are voluminous, stimulant frictions with the ammoniacal protochloride of mercury, or of the deutoxide or sub-sulphate of mercury, in the proportion of a scruple to a drachm of either of these preparations to an ounce of lard, are to be employed; also-vapour-baths, and streams of vapour, or sulphuretted waters, directed on the part, renders absorption more active.

Porrigo. Seven varieties of this affection have been described by Willan: M. Biett thinks that there are but two kinds, which he names *P. favosa*, and *scutulata*; he considers *porrigo furfurans* to be either *pityriasis capitis*, or more often chronic eczema of the scalp; and *porrigo larvalis* to be a form of eczema *impetigenodes*, or *impetigo figurata*, to which also he refers the *porrigo favosa* of Willan, and describes under the term *favosa*, what that author has called *lupinosa*. The importance of readily distinguishing these contagious cutaneous affections is such, that any division by which their diagnosis is rendered more simple is very advantageous. Dr. Bateman felt the impropriety of classing contagious and non-contagious eruptions under the same class, and in a note to his 6th edition, (p. 160,) questioned the propriety with which Dr. Willan classed the *crusta lactea* under the genus *porrigo*, and confessed that he left it there "in deference to his venerated preceptor."

Porrigo Favosa. (*P. Lupinosa, Willan; Teigne Faveuse, Alibert.*) This eruption most frequently affects the hairy scalp, but it is sometimes found on every other part of the body. The eruption consists of pustules denominated "favi," which are at first small, circular, set deeply in the skin, containing a liquid which immediately concretes, forming a yellow, straw-coloured, dry matter, having a central depression, which can by means of a lens be recognized at a very early period; this is well-marked at the end of five or six days; the pustules are usually isolated at the beginning, some-

times grouped ; the skin surrounding each is very red, there is greater or less itching, and each pustule is often traversed by a hair. The concretions augment slowly in quantity, preserving their central form and cup-like depression ; when they approach each other, they unite and form yellow incrustations of greater or less extent, covered with alveolar depressions, each of which corresponds to a former pustule. Alibert has judiciously compared the appearance of this stage of the eruption to that of the cup-like receptacles of lichens, which cover the trunks of some trees ; this is peculiarly applicable to these incrustations, which sometimes surround the limbs. If these concretions are detached by emollient applications, the skin beneath is found to be slightly eroded, and new incrustations do not form unless a renewed eruption of favi takes place ; the red and fetid sanies which often flows from the excoriated surface forms irregular scabs. When the disease is not interfered with, the crusts become very adherent, and remain for months or even years ; they increase in thickness, are of a white colour, and eventually break off in fragments ; the skin beneath is thickened and changed by chronic inflammation. Frequently successive crops of pustules form in any places. The hairs even from the commencement are pulled out with facility ; in a later stage they fall and leave the skin smooth and shining : new hairs rarely are formed on this surface ; if they are re-produced, they have a remarkably lanuginous appearance. Alibert has compared the smell of the eruption to the urine of a cat. The duration of the eruption is uncertain. Alibert has denied the contagious nature of this disease, but M. Biett has been convinced, from numerous cases, that this opinion is not correct. A case which occurred in one of his wards at the Hôpital St. Louis last Summer, and which was reported at the time in one of the medical periodicals, afforded him an additional proof of its contagious nature. A man had been a patient in the wards some months, the greater part of whose trunk and legs were covered with the well-marked eruption of porrigo favosa. In the next bed was a patient admitted subsequently with pustules of ecthyma luridum, and after some weeks two or three well-marked "favi" appeared on his fore-arm. On inquiry it was found that this man officiated as tailor to the ward, and had been employed in mending some of the garments of the infectious patient.

Treatment. This is almost wholly external : in a few cases only tonic bitters or laxatives are required. Great cleanliness must be observed, the hairs must be cut short or shaved, and the incrustations detached in order to apply local remedies to the diseased surface. In order to detach the incrustations, large emollient cataplasms must be employed, and the surface must be washed with soft soap and warm water. Preparations of alkalies and of sulphur, and acid lotions, are the best local applications. In order to detach the hairs after the surface is cleansed, the scalp is to be anointed daily from five to ten minutes with an ointment composed of one or two drachms of subcarbonate of potash or soda, mixed with an ounce of lard ; lotions for the same purpose are made by dissolving two drachms of this salt in a pint of water. A lotion composed of a drachm or two of sulphuret of potash with a pint of water, or the following lotion, (Barlow's lotion,) containing sulphuret of potash, ʒij. white soap, ʒiiss. lime water, ʒvij. alcohol ʒj. frequently is of great use in modifying the diseased action of the

skin. Light sulphur douche baths, repeated daily, fulfil the same indication still better than simple lotions; and they have this advantage, they prevent the ointments employed remaining too long on the surface. Great care is required in the application of the remedies. The basis of the remedies employed by the Messieurs Mahon is an alkali, and the fame they have gained is owing greatly to their applying invariably the medicaments with their own hands; the number of successful cases which they have treated has been over-rated, as they make no distinction between porrigo and other less troublesome affections of the scalp, denominating them all "teigne." Weak lotions, containing muriate and nitric acids, have been much recommended. M. Biett has found an ointment, composed of a scruple or half a drachm of ioduret of sulphur with an ounce of lard, and rubbed on the parts affected night and morning, the most efficacious of all topical applications; in a few weeks so modifying the diseased action of the skin, as to prevent the formation of new pustules, and to cause a growth of hair. When the eruption is on the body and limbs, baths, especially those of sulphur, are useful. When the disease is local, and consists of a few scattered pustules, after detaching the scabs, the surface should be cauterized with nitrate of silver. In all cases great perseverance is necessary both on the part of the physician and the patient.

Porrigo Scutulata, Ringworm of the Scalp, Scald Head. This differs from porrigo favosa in the position of the pustules, instead of being distinct and isolated they are always in groups, forming circles, in the circumferences of which the small yellow favi are in greater numbers than in the centre. They are preceded by red circular spots, and are accompanied by severe itching. The incrustations are at first thin, subsequently they become thicker, and so extensive that in old cases the whole scalp appears covered with a thick "calotte," the circumference of which bears evident marks of the first form of the eruption, such as small but defined parts of numerous circles; there are no hairs except at the union of the scalp with the skin of the face, and these are thin and lanuginous, forming a kind of corona; the eruption itself at this stage does not present the cup-like depressions of porrigo favosa, but yellowish-grey, dry incrustations, which are detached in small portions, having the appearance of coarsely powdered mortar. When the disease is more partial the pustules are sometimes found in all their different stages. The description of the pustules of the porrigo favosa, in their early state, applies to these. The hairy scalp is the special situation of porrigo scutulata; at the same time it may be found on the forehead and neck. It is very rarely seen on the body, and when it appears there, it is generally the result of direct contagion.

Diagnosis. The only species of porrigo with which this eruption can be confounded is the porrigo favosa; it differs from the others (so called by some authors) by the nature of the pustules (favi), the colour and form of the incrustations, the baldness which it produces, and its contagious character. The primary pustules of porrigo scutulata are like those of porrigo favosa, small, yellow, set deeply in the skin, and depressed in the centre; but in the former the pustules are agglomerated into circles, whilst those of the latter are at first distinct, and when united never form regular figures. When

the incrustations of porrigo scutulata cover the head they are more likely to be confounded with a similarly extensive eruption of porrigo favosa, but the large incrustations of the latter are never bounded by defined margins, and if carefully examined some cup-like depressions will be found: whilst defined portions of circles are always seen around the circumference of the eruptions of the former, there are no cup-like depressions, and the dry and detached pieces of the crusts have the appearance of broken mortar. Impetigo figurata of the hairy scalp may be mistaken for porrigo scutulata, or this latter eruption on the limbs may be confounded with the former; as the pustules of impetigo figurata are agglomerated, forming thick scabs, regularly circumscribed, and sometimes circular; but the pustules of impetigo are superficial, slightly prominent, placed on a red and very inflamed surface, containing a liquid which slowly thickens, and forms a true scab at the end of some days; whilst those of porrigo scutulata are more deeply set in the epidermis, accompanied by a slight inflammation at their base, and containing a matter which is concrete almost at their first appearance; again, in a later stage, the scabs of impetigo are much thicker, and after they have fallen off are reproduced by a sero-purulent discharge from the inflamed surface, whilst the incrustations of porrigo scutulata are never reproduced unless by a new formation of favi. Impetigo figurata usually occupies but a small surface, the patches are isolated, it is not attended by loss of the hair, it is not contagious; porrigo scutulata is but rarely seen on the limbs, and then it generally is found at the same time on the hairy scalp.

The treatment to be pursued is precisely similar to that recommended for porrigo favosa. As it is highly contagious care must be taken that the cloths and sponges employed should not be used by uninfected individuals.

Porrigo Larvalis of Willan, (Teigne Neuqueuse, Alibert.) This non-contagious eruption, the crusta lactea of authors, has been well described by Bateman, who considered that it should be denominated impetigo larvalis: M. Biett considers it to be a form of impetigo, or eczema impetiginodes.

Treatment. In the greater number of cases tepid and emollient washes are alone required; in young infants it is sufficient to direct the nurse to eject the milk from the breast itself on the diseased surface. If the child is older, and there is much inflammation, a few leeches behind the ears; if it occupies the scalp, the hair is to be cut short, and the scabs detached by bread and milk or potatoe poultices. If it has become chronic, lotions containing a drachm of sulphuret of potash, and two drachms of sub-carbonate of potash or soda in a pint of water are useful in modifying the state of the skin. When it affects the trunk, sulphur baths, or sulphur douche baths are beneficial. Gentle laxatives may be given.

PAPULÆ.

M. Biett recognises two forms of papulæ, lichen and prurigo; he conceives strophulus to be a lichen which affects infants; and as Dr. Willan has divided them merely from the one form affecting children, and the other adults, not from any distinction in their primary forms, this more accurate classification is to be preferred for its simplicity. Lichen is an eruption of

full, solid, elevations, generally very small, sometimes slightly red, but most frequently of the colour of the skin, almost always agglomerated and accompanied by itching. It is not contagious. It has two well-marked forms; lichen simplex and lichen agrius.

1st. Lichen Simplex. This may be either acute or chronic. If acute, the papulae, which are very small, and agglomerated in larger or smaller numbers, are slightly red and inflamed, accompanied by heat and itching; at the end of three or four days the redness diminishes, a slight desquamation takes place, and the disease terminates in about a fortnight, unless there are successive eruptions; it appears usually on the face and trunk. In the chronic form, which is the most common, the papulae are of the colour of the skin, or of a light red colour; they are preceded by slight itching; the small elevations are readily felt by the fingers, giving the sensation of small hard bodies placed immediately beneath the upper skin. It is a very tedious complaint, remaining many weeks or months. The extremities and the dorsal surface of the hands are the situations on which it is found. It is seldom preceded by general symptoms. The papulae are sometimes traversed by hairs (lichen pilaris, Willan); in individuals weakened by misery and privations they are livid (lichen lividus), but this is very rare; instead of being irregularly scattered the papulae sometimes form regular circles, augmenting at their circumference by new eruptions, whilst the centre heals (lichen circumscripatus). M. Biett has described another species, the lichen gyratus, from the regular and twisted form produced by the groups of papulae, which may be confounded with psoriasis gyrata. There are also two important varieties, the lichen urticatus and lichen strophulus, which includes the varieties of strophulus of Willan; both these forms are so well described by Bateman, that it would be superfluous to go into any detail here.

2d. Lichen Agrius. This may exist spontaneously, or succeed to simplex. Numerous small elevated papulae, very red and inflamed, are formed on an erythematous surface; the surrounding skin is inflamed and painful; instead of these symptoms diminishing on the fourth day, as in lichen simplex, the inflammation augments, the papulae increase in size, their summit ulcerates, a sero-purulent liquid is formed, which produces small yellowish elevated scabs, not rough but soft, and but slightly adherent. Sometimes the inflammation ceases, and the eruption terminates by desquamation in about a fortnight. The itching is so troublesome that the disease is aggravated by the constant scratching which it induces. It sometimes becomes chronic, and the scabs are replaced by a branny exfoliation, accompanied by a chronic thickening of the skin; this state may last many months.

Lichen affects all ages; it commences usually in the Spring and Summer; arising frequently from a disturbed state of the general health, or from direct irritating applications.

Diagnosis. Often difficult. Lichen simplex may be confounded with eczema, scabies, and prurigo. The papulae of prurigo are situated, similarly to those of lichen, on the extended surfaces of the limbs, but they are larger and flatter; the summit of many is covered by a black scab formed of dried blood produced by the scratching of the patient: the pruritus in prurigo is more burning and excessive than in lichen, which is frequently very slight.

Lichen circumscrip^{tus} may be mistaken for herpes circinnatus, but the circles of herpes are more inflamed, and those of lichen, although more elevated, are often of the colour of the skin. Papulæ can be found in the centre of the patches of lichen circumscrip^{tus}, whilst the skin in the centre of herpes circinnatus is perfectly healthy. When the vesicles of herpes cannot be seen, numerous small round points surrounded by a narrow white border, which formed the base of each vesicle, are found.

Lichen urticatus may be confounded with erythema papulatum, but the patches of this eruption are larger, less red and elevated, and never are accompanied with the severe itching with which the other is attended; it differs from syphilitic lichen from the absence of the coppery colour: this eruption is slower in its progress, and is never attended with pruritus. The diagnosis between lichen simplex and eczema and scabies has been given in the descriptions of those eruptions. Lichen agrius may be confounded with acute and chronic eczema, impetigo and psoriasis. But the thin, soft, and slightly adherent scabs are very different to those of impetigo; and besides, papulæ may be found around the margin of the eruption. The scales of psoriasis are larger than the branny exfoliations of the chronic form of lichen agrius. The differences between this and eczema have before been pointed out.

Treatment. The acute form of lichen simplex requires merely diluent drinks, tepid or cold baths; when it is chronic, slight laxatives, alkaline or sulphur baths, and sometimes frictions, with ointments composed of calomel, 3ss. camphor, gr. xij. lard, 3j. or of 12 grs. to a scruple of proto-ioduret of mercury with an ounce of simple ointment. The antiphlogistic treatment, with general or local bleedings, emollient poultices, and tepid baths, is to be employed in the first stage of lichen agrius, if attended with much inflammation, also purgatives of calomel and castor oil. If the eruption is obstinate, arsenical preparations, such as Fowler's solution, five drops of which is to be taken daily, and gradually increased to 25 or 30 drops, watching its effects on the bowels with great caution, and suspending it when at all necessary; the local applications are similar to those recommended in the chronic lichen simplex.

Prurigo. Both the divisions of this troublesome complaint, and the treatment, as laid down by Bateman, are followed by Biett. In prurigo podicis the cinnabar fumigations have been found very beneficial, but as they diminish the strength of the patient when the whole body is subjected to their influence, M. Biett has introduced into the Hôpital St. Louis an apparatus by which the fumes are applied only to the part affected.

SQUAMÆ.

The classification of Willan is followed, no alteration having been made in the number of genera.

Lepra. M. Biett recognises but one form of lepra, the lepra vulgaris of Willan; the lepra alphoides differs from it only in the lighter colour of the patches, owing to the eruption affecting the young and feeble; lepra nigri-

cans is a scaly syphilitic eruption. As the description of lepra vulgaris coincides exactly with that given by Bateman, we shall pass to its diagnosis. Porrido scutulata at the commencement, or after the incrustations have fallen off, leaving a red annular surface, may, for a short period, be mistaken for lepra vulgaris affecting the scalp; but, by watching its progress, the eruption of favi, the nature of the incrustations, the destruction of the bulbs of the hair, and the contagious character of porrido, will sufficiently distinguish the two affections. The tubercular syphilitic eruption, from the circular form which it sometimes assumes, may be mistaken for lepra; but, on examination, the circles will be found not to be continuous, but formed of isolated tubercles, having distinct intervals left between them; these tubercles are shining, elevated, not covered with scales, or at least, in some few cases, but partially covered with extremely small and hard lamellæ; besides the coppery or violet tint, the cicatrices which are generally found in the neighbourhood of the eruption, and the concomitant general symptoms, render the diagnosis more easy. Lepra vulgaris is usually distinguished from psoriasis with much facility by the irregular patches of the latter eruption; but the circular spots of psoriasis guttata may be confounded with lepra, particularly when this eruption is declining; on careful examination, the spots of psoriasis guttata will be found to be less regular in their shape, always smaller, and presenting no depression in the centre, free from scales. When, during an extensive eruption of lepra, the circles unite and become confounded, they may simulate the irregular patches of psoriasis, but parts of distinct circles will be found around the circumference.

Treatment. M. Biett has found the three following methods most successful in this frequently intractable complaint. 1. By purgatives, according to the treatment of Hamilton. This is used when the eruption is recent and not extensive; and particularly when it affects children. The most useful purgative is four grains of calomel, with the same quantity of powdered jalap, administered every morning; it is not unusual to obtain a cure by this method in two months, and it rarely salivates. In some cases, a daily dose of 3ij. or 3ss. of sulphate of magnesia or soda, given in a weak bitter infusion, is sufficient: at other times more drastic purgatives, as aloes, colocynth, and gamboge, according to the strength of the patient and state of the eruption. 2. By tincture of cantharides. The effect of this is often surprising when given in cases which have resisted purgatives where the eruption is of great extent and the constitution feeble. The patient should be restricted to a low diet, and from three to five drops should be given in a teaspoonful of water every morning; this dose should be gradually increased, adding to it five drops every six or eight days, and watching with care its effect on the digestive and genito-urinary organs; if it produces nausea, heat in the epigastrium, ardor urinæ, erections, &c. (which are seldom caused by it), its use must not be persevered in until these symptoms decline; in this cautious manner, the daily dose may be gradually increased to twenty-five or thirty drops; frequently, and particularly in females, the eruption is wholly cured by this medicine in 45 or 50 days. A case of lepra at the Hôpital St. Louis was cured in one month by this tincture, which had existed for 18 years. 3. By arsenical preparations. Where lepra has existed many years, where it covers great part of the body, and produces a

chronic thickening of the skin, arsenic is of signal service. Three drops of Fowler's solution every morning, gradually augmented to twenty or twenty-five, beyond which quantity it is improper to administer it, or twenty minimis of Pearson's solution, increased gradually to a drachm, are the most convenient forms for administering arsenic. Great care must be paid to its action on the digestive organs. The most useful topical application is the ointment of ioduret of sulphur, particularly in cases in which energetic internal remedies are prohibited by the weak state of the patient. Sulphur-baths and vapour-baths very beneficially assist the action of the other remedies.

Psoriasis. The four varieties of this eruption and their descriptions, agree precisely with those of Willan and Bateman. The treatment to be employed is that which has been recommended in lepra. In psoriasis inveterata, M. Biett has administered with success a preparation of arsenic, known in France by the name "pilules Asiatiques;" this consists of fifty-five grains of protoxyde of arsenic, mixed with nine drachms of pepper, and made up into eight hundred pills, each pill contains about 1-30th of a grain; one pill must be commenced with daily, and the dose increased to two, but never more. He has also found very minute doses of arseniate of ammonia, such as the 30th of a grain given daily, remove, in a short time, this inveterate eruption. In psoriasis palmaria, as well as in other local varieties, much advantage has been derived from frictions on the diseased surface, which has been previously softened by warm emollient baths, with ointments containing the proto-ioduret of mercury, or the ioduret of sulphur, in the same quantities before prescribed.

Pityriasis. The descriptions and treatment are similar to those of Willan and Bateman, with the exception of pityriasis versicolor, which our authors call an ephelis; Bateman, although he has followed Willan in his arrangement of varieties, considers that these two eruptions differ but little, and that pityriasis versicolor frequently degenerates into an ephelis. The desquamation following chronic eczema and lichen may be confounded with pityriasis; but the vesicles of the first or their remains, and the papulae and thickened skin of the second eruption, as well as the constant renewed formation of the scales of pityriasis, which never happens in the others, sufficiently distinguish them.

Icthyosis. Both M. Biett and M. Alibert consider that this eruption is most frequently congenital and hereditary; this is not mentioned by Bateman; he merely states "that it often commences in childhood, and often in early infancy." When congenital, the skin of the newly-born infant, instead of presenting a smooth, polished surface, is dull, thick, and furrowed, or remarkably dry, and covered by small scales of a grey colour, formed by the exfoliated epidermis; as the infant becomes older, the characters of the eruption are more marked; these are admirably described by Bateman. M. Biett considers that congenital ichthyosis is a disease incurable by medicine; palliatives may be prescribed, such as mucilaginous baths and lotions, vapour-baths, &c. to render the skin less dry and hard; indeed, in the other forms of ichthyosis, these are the only means which have been found serviceable at

the Hôpital St. Louis. In the post-mortem examinations of those who have been affected with ichthyosis, no organic disease has been discovered which could be connected with the eruption; indeed the patients usually enjoy good general health.

TUBERCULÆ.

M. Biett admits only three classes—elephantiasis of the Greeks, framboesia, and molluscum.

Elephantiasis of the Greeks. The term “elephantiasis” has been indiscriminately applied, by many modern writers, to a tubercular eruption and to a chronic enlargement of the cellular tissue of the leg, which, from its being an endemic complaint in an island of the West Indies, has been called “the Barbadoes leg.” Dr. Bateman, in his learned history of elephantiasis, has endeavoured to reconcile the descriptions of the ancients with those of the more modern authors, and has decided that the Greeks applied the term *ελεφας* and *ελεφαντιασις* to a tubercular eruption (a very accurate drawing of which he has given in his quarto volume of plates), and that the Arabs have described by the same name a chronic enlargement of the skin and cellular tissue of the legs. Dr. J. Mason Good has stated that “dal fil” is the common name for the swelled leg, in the present day, among the Arabians, who sometimes contract it to “fil” alone, literally “elephas.” The confusion was still more increased, by the translators of the works of the Arabian physicians into Latin naming elephantiasis the “Arabian leprosy.” Elephantiasis of the Greeks is placed among tuberculæ, that of the Arabs in the anomalous orders. The description which Dr. Bateman has given of this tubercular eruption is, as he candidly acknowledges, drawn from books, as he had seen but four cases. The following description is drawn up from the lectures of M. Biett, who has had more opportunities of observing this eruption. The face and limbs are most frequently the seat of the eruption. The tubercles are preceded by dark spots on the skin of whites, of yellowish or reddish on blacks; they are at first elevated, irregular, red or livid, and soft, from the size of a pea to that of a nut; sometimes indolent, at other times acutely sensible; the intervening skin is hypertrophied, causing great deformity. The eruption may remain stationary for a long time or make rapid progress, the whole face being covered by knotty tumours, divided by deep furrows; the nostrils become dilated, the nose, lips, and ears monstrously enlarged; the eyebrows and ciliae fall out. The limbs are oily and shining, covered with enormous flattened tubercles; the subjacent cellular tissue is tumeified; the sensibility, which was in the first instance excessive, gradually diminishes until all feeling is lost, as well as the voice and smell, whilst the senses of vision and touch are singularly deteriorated; the moral energies are similarly weakened and depressed. The “libido inexplebilis” which is said to accompany this disease, has not been observed in the cases admitted into the Hôpital St. Louis. In the most severe cases the tubercles ulcerate, the foul ulcers pour out a sanies which forms adherent blackish scabs. The mucous membrane lining the mouth and covering the tongue, as well as that of the conjunctiva, is covered with tubercles. On examinations after death, the gastro-intestinal mucous membrane is almost always discovered to be in a diseased state, and the immediate cause of death is, in

the greater number of cases, extensive ulceration of the ileum, the ileo-cæcal valve, and the colon. The tubercles on the membrane lining the mouth are found ulcerated, and they are sometimes traced as far as the ventricles of the larynx. Tubercles (that is pulmonary tubercles, as described by Laennec, &c.) are found in the lungs and mesentery; Alibert and Ruette have described the bones, in some cases, as soft and spongy. Elephantiasis is often hereditary, but not invariably so. M. Biett attended a West-Indian lady who gave birth to several perfectly healthy children during the progress of this disease. Almost all the individuals met with in France, affected with elephantiasis, are natives of the colonies.

Prognosis. It is always a serious disease; usually a fatal one. The patients, morose, sad, debilitated, discouraged, and totally deprived of the greater number of their senses, are destroyed by a slow fever; or, from an extension of the eruption along the mucous surfaces, death is produced by the most intense chronic gastro-enteritis. In some rare cases, where the eruption is recent and of small extent, the tubercles are gradually absorbed.

Treatment. If the individual affected with tubercular elephantiasis applies for relief at the commencement of the disease, dry frictions, liniments, and particularly blisters, are to be employed, to increase the vitality of the skin. When the eruption is more advanced, but still circumscribed, as, for example, to a part of the ear, frictions of an ointment composed of hydriodate of potash, 3j., lard, 3j., or douche vapour-baths, directed on the part for 15 or 20 minutes daily. When more extensive, and the general health permits it, sudorifics, tincture of cantharides, and arsenical preparations, in the doses recommended in lepra, may be tried. When the mucous membranes are attacked, soft mucilaginous drinks, low diet, opiates, &c. are to be substituted. It is always advantageous to change the climate.

Frambaesia—the Yaws. This tubercular disease, which is indigenous in Africa, and very common in the West Indies, has been met with more than once by M. Biett in France. It is well described by Bateman.

Molluscum. Nothing has been added to the description of this disease given by Bateman; M. Biett has never seen the contagious variety. A case confirming the two cases of contagious molluscum, given by Bateman, was communicated to our authors by Dr. Carswell (now a Professor at the London University), which fell under his inspection in Edinburgh.

We must make the consideration of maculæ, and the anomalous orders, the subject of another article.

VI.

A PRACTICAL MEDICO-HISTORICAL ACCOUNT OF THE WESTERN COAST OF AFRICA; EMBRACING A TOPOGRAPHICAL DESCRIPTION OF THE SHORES, RIVERS, AND SETTLEMENTS, WITH THE CAUSES, SYMPTOMS, AND TREATMENT OF THE FEVERS AND OTHER DISEASES OF WESTERN AFRICA. By *James Boyle, M.R.C.S.* Colonial Surgeon to Sierra Leone, Surgeon R.N. &c. Octavo, pp. 424. Highley, Dec. 1831.

It is not a little extraordinary, as Mr. Boyle remarks, that no work on the diseases of Africa should yet have emanated from the medical press of this country, so fertile in all kinds of publications on very inferior subjects. Yet Africa is the grave of Europeans, and especially of the English, beyond that of any other colony, in proportion to extent or population. Our travellers, medical and non-professional, have penetrated into the wilds of that barbarous and deadly quarter of the world—while our soldiers, sailors, and merchants have been swept from its pestilential shores by sickness and death; yet no medical work has been published on the nature of the diseases, or the means of guarding against them. But however destructive may be the climate of Africa, there is reason to believe that its terrors have been sometimes exaggerated, and that men of talents and acquirements, in whatever calling, have generally been intimidated from serving in that colony. Even those who have struggled strenuously to brave the dangers of the climate, have too often been hastened to the grave by the foreboding and anticipations of sickness or death.

It is hardly possible to give up intercourse with the African Coast, so extensive is our trade in gold dust, ivory, wax, hides, &c. besides timber of a valuable kind. It behoves us, therefore, to make the best of it, by lessening the mortality if possible.

Mr. Boyle had fair opportunities for observing the diseases of Western Africa, both at sea, and as colonial surgeon during five or six years there. The records, also, of our naval and military medical practitioners have been liberally laid open to him, by Sir James Macgrigor and Sir William Burnett, from which documents the author has gleaned important information.

The work is divided into eight chapters, each embracing a distinct subject. The first chapter, occupying 70 pages of letter-press, is on the important subject of medical topography, and takes in a wide range, including the river Gambia, Sierra Leone, Bathurst Settlement, Rio Grande, &c. We shall only be able to give a few extracts from this highly-interesting portion of the work. The first is from the medical topography of Bathurst Settlement, the most northern of the British establishments, and the chief on the river Gambia. It is situated on the small island of St. Mary, commanding the navigation of the river, but badly adapted for the preservation of health. It consists of barren sand and tenacious mud, overgrown with jungle.

"The wet season is immediately preceded by tornadoes or thunder-storms, which, together with the harmatan, another wind peculiar to this coast, will be described under the head of Sierra Leone, as they are the most strongly felt at that settlement. The rains are tremendous, and swell the river so considerably,

that, during their fall, almost the whole of the island is inundated. The part upon which the town is built escapes not, and but for the precaution taken in building the houses, many would be uninhabitable during this period. When the rains subside, and the river returns to its level, an immense deposit of vegeto-animal matter is left behind, the whole of which undergoes the process of decomposition, and, from being acted upon whilst in that state by the rays of an almost vertical sun, fills the air with noxious effluvia. This effluvia, combined with the remaining moisture and the high range of temperature, form the great cause of fever and of ague, which prevail during its existence to so lamentable an extent as to make this settlement appear a focus for those diseases and the grave of Europeans." 6.

SIERRA LEONE.

This settlement, the principal one on the Western Coast of Africa, and about which we all have heard so much, is beautiful, or even romantic, to the eye, when first approached on a fine day; but deadly to the health when taken up as a residence.

"There are very few parts in the tropical world, which, at first sight, hold out more allurements, even to the experienced traveller, than Sierra Leone. Its splendid scenery, and its beautiful river, together with its extensive, commodious, and generally secure harbour, and pleasant-looking town and villages, are calculated to excite the most flattering hopes in respect of health and enjoyment, notwithstanding strong previous impressions to the contrary. On making Sierra Leone from the north, the mountains from which the peninsula was named, first excite attention. They are lofty, perpetually clothed, from their summits to their bases, in all the fertile gaiety of nature's verdant and richest scenery; and there is a pleasing and endless variety in the outline of their countless peaks and declivities. As the ship draws in with the shore signs of civilization appear and increase with rapidity, both in number and attractiveness. Freetown and the lately-formed villages in its neighbourhood at first shew like anomalous patches in the view, but, on a nearer approach, they add greatly to its beauty and its interest. When the ship has arrived just at that point of distance from which a person may see all the broad outlines and apparent characteristics of an extensive scene, without being able to discern the minute details, the effect is magnificent. On the left hand is the Bullom shore, low but covered with luxuriant and richly-coloured bush, an occasional palm and pullom tree, rising in graceful form above the neighbouring mangroves: in appearance it seems to embody the notions formed of fairy land, but its realities most sadly illustrate the folly of such dreams. The middle ground also occurs on the left hand, and it gives a variety to the view. In front are the spacious river, (extending farther than the eye can reach) and the north side of the peninsula, with its lofty mountains and Freetown, running to the water's edge, and surmounted by barracks, and protected by a handsome fort, and a coast forming numerous small and convenient bays from the town to its termination at the cape, which runs boldly into the sea. On the right is the Atlantic. That a scene, composed of such ostensible material features, is grand and imposing, may readily be supposed; but those who are ignorant of the peculiarities of a tropical clime, and its seductive influences on a stranger, can form no adequate notion of the character and extent of its actual power. For the moment home is forgotten, or if remembered, the remembrance is accompanied with a desire it should be situated in such a seeming paradise. In thus speaking of the view on arriving at Sierra Leone, we are supposing that settlement to be made on a fine clear day, when the atmosphere is bright and comparatively devoid of malaria, and the river runs its natural course, unswollen and free from discolouration. Should the arrival, however, happen at a different period, when the atmosphere is dense, oppressive, and

fraught with deleterious exhalations, and the rains are deluging the face of the country, and at once augmenting the river and destroying its beauty, then Sierra Leone presents a very different appearance; there is little or nothing to excite a pleasing anticipation, but there are a world of causes for apprehension and for dread. The realities of the scene are of course unaltered, for the two periods are the property of the climate, and must be alike endured by the colonist, but the appearances present a melancholy and a fearful contrast." 25.

This settlement contains about 26,000 inhabitants, one-third of whom inhabit Freetown, the rest being distributed in the surrounding villages.

"The inhabitants of Freetown consist of Europeans, Maroons, Settlers or Nova Scotians, exiles from Barbadoes, discharged soldiers from the West India regiments, Mandingos, liberated Africans, and Kroo-men; while those of the villages consist almost exclusively of a very few Europeans, (as the managers and most of the church missionaries) discharged soldiers, and liberated Africans." 30.

The Europeans are about 120 in number, and, with few exceptions, adult males; women and children are rarely met with, as they are unable to resist the deleterious influence of the climate—at least in Freetown; for in the villages, which are more healthy, they stand a better chance. It appears from Mr. Boyle, that the influence of climate is augmented by the imprudent habits of the colonists. They are too frequently loose, careless, and dissipated.

"It would not be difficult to assign many other reasons for much of the suffering notoriously endured by Europeans in this settlement; but, after all, the great leading cause would be found to be the intrinsic quality of the climate of that region. Wholly and successfully to oppose that cause human ingenuity can hope to devise no adequate plan, but many suggestions might be offered calculated to meliorate its influence. It may be sufficient to remark in this place, that a moral life, freedom from fear, cheerfulness, moderate exercise, and particular care in avoiding the extremes of the atmosphere, are absolutely necessary to allow the English constitution in this climate a fair chance of sustaining life. To the practice of these auxiliaries to health, Sierra Leone offers no preventives; but, on the contrary, many facilities, which are to be found in the construction of Freetown and in the mountains." 31.

Mr. Boyle gives an excellent description of the seasons of Sierra Leone, dividing them for convenience into the dry and the wet seasons. The dry commences about the end of September, its approach being usually announced by two or three tornadoes, which, though portentous in appearance, are hailed with joy by the inhabitants, as harbingers of health. We shall indulge our readers with a description of one of these elementary conflicts.

"A violent tornado appears to strangers a most appalling visitation, and produces an extraordinary effect upon their feelings. It consists of successive flashes of most vivid lightning, tremendous shocks of thunder rapidly and alarmingly reiterated, impetuous gusts of wind, and deluging rain. This terrific combination of the elements sweeps along the whole of the coast under consideration; but it occurs with peculiar violence, on what is called the windward coast, especially at Sierra Leone. Its denomination is derived from the Portuguese, it being a corruption of the word *Trovado*, which means thunder-storm. Its approach is first discernible by the appearance of a small, clear, silvery speck at a high altitude in the heavenly expanse, which increases and descends towards the horizon with a gradual and slow, but visible motion. In its descent it becomes circumscribed by a dark ring, which extends itself on every side; and as soon as

the silvery cloud approaches the horizon, veils it in impenetrable gloom. At that moment the elements seem to have ceased their operations, and the very functions of nature to be paralyzed ; the atmosphere appears to be deprived of the spirit of vitality, and a sensation of approaching suffocation pervades and oppresses the physical system. The mind is wrapt in awe and suspense, but the latter is speedily relieved by the dark horizon being suddenly illumined by one broad blaze of electric fluid ; peals of distant thunder then break upon the ear and rapidly approach and increase in frequency and violence till the shocks become appalling ; when the thunder is at its loudest a tremendous gust of wind rushes with incredible, and often irresistible vehemence from the darkened part of the horizon, not rarely in its course carrying away roofs of houses and chimney-tops, blowing down or up-rooting trees and laying the stiffeſt and largest ships on their beam-ends, or sinking them, whether under-weigh or at anchor ; and to that succeeds a furious deluge of rain, which falls in one vast sheet rather than in drops, and concludes this terrible convulsion.” 41.

By this atmospheric commotion noxious exhalations, before confined to the neighbourhood of their sources, are swept away—the feelings are lightened—the weather becomes hot and clear—the inhabitants healthy. About Christmas the harmattans occur, and last for some weeks. They blow from the eastward. They impregnate the air with an impalpably-fine sand, and one very annoying to the seasoned Europeans—more so than to those newly arrived. During these dry winds the furniture splits—fluids quickly evaporate. They induce coughs, colds, and a species of irregular intermittent fever among the old settlers. About the beginning of March a tornado usually ushers in the rainy season, which is at its acmé in July, and subsides in September.

Mr. Boyle winds up the medical topography of the African coast with a meteorological diary of every day in a whole year, by which it appears evident that the temperature of Sierra Leone and other parts is greater, upon the whole, than that of Madras or Calcutta, while the rains are more frequent, and the terrestrial circumstances not at all less unfavourable to health, than in either the Eastern or Western Hemisphere. The author concludes this portion of the work with some very judicious observations on hygiene, as applicable, in an especial manner, to Sierra Leone. It appears from Mr. Boyle, that the greatest source of illness at the abovementioned town is the Bullom swamp, situated in its vicinity. The author proposed some time ago, to Government, that a certain number of people, chiefly liberated African soldiers, should be located on that part of the swamp which is most contiguous to Freetown, in order to cultivate it, to plant it with trees, and thus to form a kind of defence against the malaria wafted by the winds to the capital of the colony. This corresponds with Italian hygiene, as may be seen in another part of our present number. We do not expect, however, that Government will attend much to matters of this sort under existing circumstances. It is too much occupied with matters of more vital importance. The colonists must look to themselves, as the colony of Great Britain itself was obliged to do, when the Roman Empire was threatened and environed with dangers at the centre !

CHAPTER THE SECOND.

In this chapter, Mr. Boyle takes up the subject of the CLIMATORIAL, or

BILIOUS REMITTENT FEVER. The author considers it of great importance to discriminate between the climatorial fever and the "African local bilious remittent fever," which discrimination, unfortunately, cannot always be made by *symptoms* alone. Various other circumstances, of an etiological nature, must be taken into consideration.

"Sol-lunar influence is powerful in the production of fever on the western coast of Africa, and indeed in all parts between the tropics. Many instances have been known of men, whilst at work under the rays of the sun, dropping down, as if shot; and that, without any previous threatening symptom or habit of indiscretion; and also men, who, to avoid the closeness sometimes experienced in sleeping between decks, have slept on the upper deck, without the knowledge of the officer on watch, thus, exposing themselves to the apparently harmless beams of a brilliant moon, have often been known to be suddenly affected with fever. The rapidity of the latter attacks precludes the thought that they were attributable to damps or dews that might be falling in the night, and which, indeed, are also common causes of fever, but not so immediate in their consequences." 76.

Immoderate indulgence in ardent spirits is a predisposing cause of fever, and so is the opposite extreme—a sudden plan of abstinence through fear of the disease. Mr. B. avers that the absolute water-drinker is in as dangerous a predicament, when once seized with fever, as the absolute drunkard. We doubt this position. Where the fever occurs in situations abounding in filth, and badly ventilated, the disease, Mr. B. thinks, occasionally assumes a contagious character, especially in ships. The following is the symptomatology of this form of fever on the coast of Africa.

"This fever is *ordinarily* characterized by severe head-ache, pain at the pit of the stomach, retching or vomiting, with a costive state of the bowels: sometimes vomiting of green bile, great heat of skin, suffused eyes, and thirst; the tongue being generally more or less furred; usually, also, pains in all the joints, and tottering of the limbs. The pulse varies from 90 strokes in a minute to 120 or 140. On minute inquiry it will generally be found that the patient is suffering from severe pain in the back or loins; and if the face do not happen to be flushed at the time, it will have a livid hue, its features having a downcast appearance, and there being, in all probability, a dark areola around the eyes. Under these latter circumstances the pulse will be less developed; nor will the skin attain to so high a temperature. Most attacks will be preceded by a sense of chilliness, and attended with loss of appetite: and, in all, the greater part of the symptoms described will soon set in, and establish the true character of the disorder." 78.

Sixteen minutely-detailed cases, from his own and several other medical officer's journals are given, in order to delineate all the various features of the fever. These will be found to be valuable references for the surgeon on the coast of Africa, when surrounded by fever cases.

TREATMENT. From the cases alluded to it appears that, generally speaking, patients labouring under climatorial fever, on the coast of Africa, do not bear bleeding so well as in some other countries, and that the blood does exhibit the usual inflammatory phenomena. Venesection must, therefore, Mr. B. thinks, be practised with precaution, especially when the local endemic fever is mixed with the common climatorial disease.

"Still the result of considerable experience upon the coast, directly and indi-

rectly, is, that blood-letting, with the above precautions, in such cases as appear to have a perfectly simple origin, that is, such as are altogether independent of local exposure, is, when the symptoms indicate increased arterial action, the first measure for adoption ; the effect produced regulating the quantity to be taken away. Increased vascular action being reduced, the next object is to cause a slightly increased flow of saliva, by means of mercury. The ordinary, and, indeed, the better mode of administering this medicine, in the form of disease now under consideration, is to give large doses of calomel at the commencement, by which the bowels will be freely, but not very frequently moved ; and by which, also, the system will be the more readily brought under the influence of that medicine. The bowels thus evacuated, two grains of calomel, with one-eighth of a grain of opium, may be given every two hours, until slight salivation and a remission of the febrile symptoms shall have taken place ; when one grain of blue-pill, and two of quinine, in the form of pill, may be substituted, and repeated at the same intervals as that of the calomel and opium. After that, the blue-pill is to be gradually lessened, rather than suddenly withdrawn, as an abrupt cessation of salivation might be attended with fatal results.

A slight flow of saliva having once taken place, it should be kept up for a few days without cessation ; and when a perfect remission of the febrile symptoms has been established, the blue-pill is to be altogether withdrawn, and equal quantities of rhubarb and quinine (say two grains of each) are to be given thrice daily until convalescence shall have fully taken place. The patient, during the period of convalescence, must be somewhat restricted in food and drink, and that rather in quantity than kind ; for, strange as it may appear, it is a fact, that a moderate indulgence in the gratification of a desire, on recovering from this fever, is much less injurious than a total denial of the patient's wishes.

If the first abstraction of blood from the arm does not sufficiently subdue the febrile excitement, the local abstraction of blood, by means of cupping or leeches, from the seat of pain, may be adopted as the safest and most judicious practice ; and if, after the use of that remedy, pain or mental aberration continue, or set in, the application of a blister to the neighbourhood of the affected part may, with propriety, be had recourse to. These measures are to be repeated according to the intensity of the disorder.

If there be great sickness of stomach, medicine by the mouth will have but little effect until leeching or blistering, or both, shall have been practised over the region of that organ ; and, that effected, an occasional drachm dose of soda, dissolved in plain water, will, in all probability, have a powerful effect in restraining the gastric derangement. At such a time, mercurial frictions, instead of the administration of mercury by the mouth, will be proper ; and small occasional doses of camphor mixture, with Tr. hyosciami, will contribute to quiet the stomach, to produce a diaphoresis, and to soothe the nervous system generally. If collapse take place, as occasionally happens in the advanced stages, ammonia should be added to the latter medicine ; but, immediately re-action occurs from such combination, the ammonia is to be withdrawn, and quinine, in some form or other, to be administered. The camphor mixture, &c., may be continued, in order to keep up a certain action in the circulatory system. During the deranged state of the stomach alluded to, enemas will generally be found preferable to purgatives by the mouth ; but when a purgative by the mouth is decided on, that should be calomel alone, followed by a magnesia draught. The quantity of calomel must, of course, depend on the object in view. If the intention be to purge and salivate, a large dose (a scruple, for instance), must be administered ; but, if to purge with activity, without effecting salivation, be desired, then five or six grains, followed by a seidlitz powder, or two or three drachms of the phosphate of soda (tasteless salts, as they are commonly called,) will best answer the purpose.

As to bark, it is generally hurtful, if given in substance ; indeed, it seems

matter for surprise, how former writers and practitioners managed to get their patients to swallow some ounces of powdered bark in the course of the day. Modern stomachs would loathe or reject a few grains in such fever cases as have been under consideration.

The warm bath is an important remedy in the commencement of the fever ; but, after that period, it is a remedy of questionable efficacy, owing to the debility attendant upon its repeated employment, and the danger of the patient's catching cold, when the mental powers are, in all probability, aberrated, and the physical faculties in a state of extreme exhaustion. After the first employment of the bath, and when the fever is at its height, and the patient has a hot, dry skin, the regular application of cold affusion of vinegar and water to the palms of the hands and soles of the feet, those parts being always the most affected with heat and tingling, will be found alike grateful and beneficial.

The use of antimonials of every description is to be deprecated, as they never fail to increase that irritability of stomach so commonly experienced, and so difficult of control, in this disorder.

When the mouth is decidedly under the influence of mercury, the febrile action positively subdued, and nothing but debility to contend with, wine, at first in small quantities, may, with propriety, be given. The period for this indulgence will generally shew itself on the seventh, eighth, or ninth day. This is to be looked upon as a general rule, rather than as one without an exception ; for it will sometimes happen, that unexpected collapse, and sinking of the pulse, will take place, and call for the temporary use of wine. In such case, good old Madeira seems to answer the purpose best ; but it is to be borne in mind that, when re-action takes place under the administration of wine, or any other powerful stimulant, the stimulant is to be withdrawn, unless the patient shall have progressed to the state alluded to above, when its use may be continued with propriety." 117.

CHAP. III. THE ENDEMIC, OR LOCAL BILIOUS REMITTENT FEVER.

This disease rarely fails to attack the British settler on the Western coast of Africa. It closely resembles the climatorial fever, and is often mistaken for it by the inexperienced practitioner. It requires a different mode of treatment. Mr. Boyle is convinced, from ample experience, that all persons from cold countries "are predisposed or liable, one day or other, to the African local bilious remittent fever," whilst southern subjects, or those of warm climates, are almost entirely exempt from the scourge. The Dutch and Swedes appear to suffer more than those of other European countries as to numbers.

When the rains commence, say at Sierra Leone, the face of Nature quickly changes, and the parched soil teems with vegetation. The inhabitants are soon surrounded by scenery that is alike alluring to the eye and calculated to the rapid diffusion of sickness and death.

"The greater portion, indeed, of the mountainous ridges around Freetown, that is, on the Freetown side, is still covered with bush, and the wreck occasioned by the violence of the tornadoes and the progress of nature, is washed by the deluging showers from the heights down to the bottom, close to the town, where it forms an immense mass of gradually decaying vegetable matter, which continues to disseminate its fatal odours until the setting in of the very heavy rains. When that period arrives, the sun being obscured, the inordinate heat of the surface of the earth is so generally reduced, that evaporation ceases ; and the streams resulting from the rains, sweep with so much power that they bear away the vegeto-animal matter, which had previously been collected, and was

in a state of decomposition and putridity, or so lessen its quantity and dilute or destroy its pernicious qualities, that its baleful influence subsides, and no fresh fever cases then appear. This temporary immunity from disease and death is again broken in upon at the approach of the dry season, when, as at the commencement of the rains, the light showers of short duration are disproportionate to the rapidly increasing intensity of the sun ; the earth in consequence becomes again heated, and evaporation once more attains its zenith." 126.

The symptoms of the endemic fever are so various and irregular in different cases and under different circumstances, that no concise nosological definition of it can be given ; we must therefore make room for Mr. Boyle's more detailed delineation of its symptomatology.

" The first attack of fever, as it is ordinarily observed to occur in the persons of strangers, such generally as are but a short time resident in the colony, although it does not always happen within the first few months, or even the first few years of residence, is characterized by a general decline of natural activity and mental energy ; and these symptoms may continue their progress during three, four, or more days, according to the peculiarities of the constitution of the subject attacked, state of the body at the time, and the degree of exposure endured. The disease then begins to unmask itself, either by pains in the limbs, loins, or head, which are not unfrequently accompanied by bilious vomiting ; and very soon after, if not at the same time, heat of skin, with a frequent pulse, and a tongue more or less furred, complete the development of the more common symptoms, and remove all doubt as to the existence of the alarming malady. The condition of the bowels forms no criterion by which to judge of the presence or absence of this fever ; for they are described by patients, at the onset of the disease, to be in a state that is natural nearly as often as in that of the opposite extremes of costiveness or relaxation. Nor is the skin, except as to its temperature, always to be depended upon as a decisive circumstance on which to determine with respect to the existence of this fever, as the surface of the body is as frequently found to be in a state of copious perspiration as in that of the unpromising converse of dryness and constriction. The pulse, too, though generally more or less above the natural range, is, in other respects, as variable as the winds ; it being, in different cases, sometimes hard, yet small, and as it were contracted ; at other times, soft, fluttering, or stridulously undulating ; and as often regular as irregular, in respect to the intervals between the sensations of its action, as communicated to the fingers and thence to the mind that examines and judges of its state. In some rare cases the pulse is full and bounding. In the latter case a suffused and inflamed appearance of the eyes is generally seen, and the eye-balls, or the lower portion of the forehead, immediately over the orbits, will be complained of as painful ; or, if not, minute interrogation will almost always lead to the detection of some fixed or general pain in the head, or to some sensation of weight or confusion in that organ ; and, under such circumstances, a strong disposition to sleep will not unfrequently be superadded, attended with sudden starting and an unconquerable degree of restlessness, which effectually prevent indulgence or gratification in the desire. When the pulse, on the contrary, is less developed, the symptoms just described will be either less marked or altogether wanting. In that case pain will be more likely to be referred to the larger joints of the extremities, or to the lumbar portion of the spine, and perhaps to both of these. Occasionally patients are met with, who, though apparently in full possession of all their perceptive faculties, declare they have no pain whatever, expressing themselves as being merely inconvenienced by an indescribable sensation of general *malaise*.

The febrile symptoms are very frequently ushered in by a slight paroxysm, or shivering fit, similar to that of intermittent fever ; but which rarely returns during the future progress of the disorder.

Accompanying the premonitory symptoms detailed, yellowness of the skin and eyes, sometimes, also appears ; and this state, when it does appear, is almost always attended with vomiting of green bile, which seldom varies its colour, except as to tint, that being at one time a light, at others, a dark, or bottle green : and in such particular case the early alvine evacuations, at least the evacuations which are procured from the lower bowels, will scarcely ever fail to exhibit a very dark tar-like appearance, and to emit a most offensive odour.

The disease once in march, gradually increases in intensity till it arrives at its critical acm , which it seldom attains before the eighth, ninth, or tenth day of its duration. In its course many changes are wont to take place ; and two attendant circumstances may be especially noticed as being tolerably uniform in their occurrence, namely, a better and a worse day, alternately ; and a daily exacerbation, which usually commences at about three or four o'clock in the afternoon, and continuing more or less severe all night, ordinarily effects a slow and partial retreat towards the following morning. At this period of the disease the patient will most probably express himself free from pain or suffering, but be greatly fatigued by delirious, or, it may be said, waking dreams, during the previous ten or twelve hours of nervous excitement and mental disturbance. When the patient enjoys this partial respite, he will often recount his fancied adventures, which are never agreeable, but full of apprehension and alarm, and frequently such as, having been attacked by some infuriated animal ; exposure to the fire of a whole army ; tumbling down the most dreadful precipices ; being in the act of drowning ; or about to be tried for his life. In this hallucinated state of the mind, great restlessness is to be observed ; the patient constantly shifting his position in bed, whilst, with his visions still before him, he is complaining, perhaps, of being so firmly bound down that he is unable to move. At times resistance is offered to supposed restraint, and, if not promptly opposed, the patient, maddening under his delusion, will certainly escape from his bed, and, in all probability, dash his way through a window into the streets, or on to a house-top, or into a back-yard, from either of which situations he will frequently extricate himself in a most extraordinary and dexterous manner. This is an extremely dangerous symptom ; it may be said to be almost indicative of certain death. When such an escape has been once effected, or attempted, a repetition of the effort is to be apprehended, and should be well guarded against. The cunning of the patient is remarkable ; for, in the midst of his suffering, his eye is often observed to be fixed on the countenance of the fatigued and dozing nurse, in the hope of detecting her asleep, and of thus finding an opportunity for withdrawing himself from what he considers to be forcible confinement. In such a state of mind no reference will be made by the patient to pain or bodily suffering ; and his answers to questions, on the subject of his feelings, will almost always be, that there is nothing to be complained of but the annoyance arising from cruelty and unkind treatment, which he supposes to be in exercise towards him. Even at this period, within a few hours probably of his dissolution, the patient may be possessed of much physical power, and exert it for a moment, as it were, in a conflict for life. The paroxysm, however, is of brief duration, and is speedily followed by the setting in of symptoms that are unerring in the fatality of their character. The symptoms which immediately precede dissolution, consist of low incoherent muttering, delirium, or perfect calm, scratching at the bed-clothes, or grasping at ideal things, with *subsultus tendinum* ; very frequently, also, involuntary discharges of urine and faeces, attended with lead-cold extremities and hiccup." 131.

Mr. Boyle found out by experience that people labouring under apparently the same symptoms and of similar constitutions, did not bear venesection on the Coast of Africa, by any means so well as in either the East or West Indies. The introduction of a couple of cases, one successful, the

other fatal, will sufficiently illustrate the practice pursued by Mr. Boyle in the endemic of Sierra Leone.

Case 1, from my own Journal, as Colonial Surgeon of Sierra Leone. William Wilson, a seaman, aged about 25, a well-formed man, of middle stature, was, this morning (17th January, 1828), brought from one of the timber ships up the river: he stated that, the preceding day, he was affected by giddiness and nausea, accompanied by severe pain in the loins, and tottering in the limbs; pulse full and frequent, but not particularly hard; slight redness about the eyes; tongue covered with a yellowish fur; skin in a state of partial perspiration, with great restlessness. The patient's bowels have been moved since his arrival on shore, and he has just vomited a large quantity of yellow bile. He complains now of extremely painful headache; this last supposed to depend upon the vomiting.—A scruple of calomel immediately; and two grains of the same to be continued every two hours after, in the form of pill; the hair to be cut close from the head, which, in addition to the whole surface of the body, when at a temperature above that of the natural standard, and not perspiring, is to be sponged with vinegar and cold water.—At six p.m. eight hours after the first visit, the patient had been greatly purged, but the vomiting and headache were increased; the state of restlessness extremely distressing, with a very hot, dry, and a constricted skin.—Thirty leeches to the forehead and temples, followed by a warm bath, and the application of a blister over the region of the stomach; the two-gr. calomel doses to be each combined with six of calcined magnesia. A little barley-water, gruel, or thin arrow-root, only to be occasionally taken, and that in very small quantities at a time.

18th. Headache gone, but no sleep; vomiting lessened, but not subdued; frequency of pulse and heat of skin greatly reduced.—Saline effervescent draughts occasionally throughout the day; the powders to be continued.

19th. Considerable reduction of the febrile symptoms, but still no sleep; and the draughts and powders are rejected as fast as they are taken.—The powders to be omitted altogether: and, in order to avoid distending the stomach with air, the violence of the effervescence to be permitted to subside previously to swallowing the draughts, which are to be continued. A drachm of mercurial ointment to be rubbed in on the inner side of the thigh every two hours.

20th. Very restless and anxious; had very short slumbers throughout the night, with frightful dreams; skin still less intensely hot; pulse 88, small and not hard; tongue loaded, but moist; no alvine evacuation since yesterday evening; added to which, pressure over the lower bowels produces slight pain.—A seidlitz powder immediately, to be followed by the administration of a mild purgative enema. Mouth not sore.—The mercurial frictions to be continued, and the blister to be dressed with blue ointment.

21st. The patient greatly relieved by the remedies of yesterday; had some sound sleep in the night, but still no appearance of salivation.—Arrow-root, fowl broth, &c., and the other measures to be continued.

22d. Expresses himself perfectly well, but weak; pulse and skin natural; tongue very much loaded; mouth apparently touched, but no saliva: the countenance is demonstrative of much stupor; the whole body, in fact appears torpid; no stool since yesterday morning.—A large blister to be placed over the cervical vertebrae, extending from between the tips of the shoulders to the commencement of the occiput, and a scruple of calomel to be taken immediately; the ointment to be rubbed in every hour.

23rd. The patient decidedly better; complains of pains from his blister, and his mouth, which latter, emits a strong mercurial odour, but saliva does not yet escape from it.—The stomach being again free from irritation, and the system apparently on the very eve of being satisfactorily brought under the mercurial influence, the ointment was left off entirely, and the following medicine directed

to be administered every two hours; viz. calomel, one grain; sulphate of quinine, two grains; with six grains of calcined magnesia.

24th. The patient having had a good night, complained only of weakness and irritation, from the state of the mouth and the blistered surface.—To discontinue the powders, and take decoction of bark, with ten grains of sulphate of quinine to each pint of the former. This, together with astringent gargles and occasional mild purgatives, to be continued until recovery of strength.

These means completed the cure, and the patient, perfectly recovered, soon after returned to his vessel.—This, from the first, was a well-marked case of Sierra Leone fever.

Case 2, from the same Journal. John Bogue, ætatis 34—admitted on the 19th Jan. 1828. Complains only of weakness and sickness of stomach; had been suffering, during several days on board, from frequent vomiting of green bile. Bowels tolerably free, from the operation of a purgative taken previously to leaving the ship. Pulse now frequent, but weak and tremulous; skin hot, but covered with perspiration; tongue very foul; eyes suffused; no headache; no pain whatever.—Subm. hyd. $\frac{3}{4}$ j. Opii, gr. j., M. divid. in pil. No. iij., statim sumend.

20th. Had been purged slightly in the night; had no sleep; bowels rather irritable; very little other perceptible alteration.—Infus. sennæ, Aq. ammon. acet. $\frac{1}{2}$ ss., Sulphas. mag. $\frac{3}{4}$ j., M. statim sumend. postea, Subm. hyd. $\frac{3}{4}$ j., Opii, gr. j., M. ft. pil. No. x. unam quaque secunda hora.

21st. Complains of pain on pressure over the region of the stomach.—A scruple of the submuriate of mercury to be taken immediately, and a large blister to be applied to the affected part.

22nd. Extremely restless and anxious, although the bowels are open and pain is not to be detected, either by examining or questioning the patient; still perfectly rational.—One drachm of mercurial ointment to be rubbed in every two hours; continuing the pills and the other usual auxiliaries in the way of drink, the occasional application of cold affusion, &c.

23d. No improvement of symptoms; on the contrary, the pulse is irregular, and communicates a kind of continuous second stroke; a tremulous thrill hanging, as it were, and returning upon the retiring pulsation: tongue black, dry and contracted, and almost motionless; no stool since yesterday morning; slight nausea, but no vomiting, except immediately after over-indulgence in the beverage directed for his common drink.—A purgative enema to be thrown up immediately, and the medicine to be continued, as directed yesterday.

24th. The patient's bowels open; he had some sleep in the night, but the countenance is greatly altered for the worse: his pulse is very small; he is in a state of stupor, and troubled with hiccough; gums swelled and red, but no saliva flowing.—To omit the mercury altogether; a large blister to the nape of the neck, and to take a third of a wine-glassful of the following mixture every half-hour: *Mistura camphoræ, libss., Ammon. carbonat. gr. x., Ether. sulphuric. $\frac{3}{4}$ j. M.*

25th. Rallied considerably in the course of yesterday, but is now apparently lost to every thing around him, although the pulse is fuller and softer than it has been for the two or three previous days.—Bottles of hot water to the soles of the feet, which are now somewhat beneath the natural standard, and mustard cataplasms to the calves of the legs; all of no avail: the unfortunate man sunk in the course of the day.

Dissection. Cadavre not much emaciated; on laying open the thorax its contents were found to be perfectly healthy, with the exception of old adhesions of the pleura pulmonalis and pleura costalis. On making the usual sections and reflecting back the abdominal parietes in the ordinary manner, the omentum being withdrawn, the whole external aspect of the viscera, *in situ*, had a pale blanched appearance. On laying open the stomach, it was found to be perfectly

healthy, containing nothing but a little flocculent mucus, mixed with part of the medicine last prescribed. Liver healthy; gall-bladder distended with dark-green viscid bile; ducts pervious. Spleen enlarged and easily broken down under the fingers. There was not the slightest appearance of inflammation in any part of the intestines: the duodenum alone contained some of the same kind of mucous matter noticed in the stomach.

It is also to be recollectcd, in reference to the morbid condition of the parts examined, that the patient was some days ill previous to his having been under medical treatment, thus rendering the appearances after death the more extraordinary." 141.

In addition to cases from his own experience, Mr. Boyle introduces extracts from the journals and reports of various medical officers, who have served on the coast of Africa, and which will furnish valuable documents for those who are doomed to exercise their talents in the same field.

The fourth chapter treats of the "irregular bilious fever" in a very able manner.

The fifth chapter embraces some important subjects—namely, the fatal epidemics which ravaged Sierra Leone in 1823 and 1829. We wish we could afford space for a full analysis of this interesting chapter, as it would afford materials for curious reflection at the present time. The epidemic of 1829 caused discussions similar to those which arose out of the celebrated Bulam fever of Dr. Chisholm, though on a smaller scale. The following short extract will convey some idea of this epidemic.

"The general character and symptoms of the epidemic fever bear so strong a similarity to those of the endemic fever, that it seems to be only necessary to refer to the description of the latter; and, in addition, to notice separately such points as are peculiar to the former.

The epidemic is more unsparing in its attacks, and more fatal in its consequences, than is the endemic; and, in fact, no climatorial seasoning gives security against its assaults; and no practice, hitherto discovered and pursued, has been generally successful in repelling them. It nevertheless, however, so much resembles the endemic in general character, that a broad and vague notion of its qualities may best be formed by supposing those of the endemic greatly aggravated.

With respect to the symptoms, it may be remarked that, as in the endemic fever, there will generally be pyrexia, but rarely so marked or developed, and it will sometimes advance with so insidious a march, as not to attract the particular attention of either the patient or medical attendant. In most cases the action of the pulse will be quickened, and the temperature of the surface elevated; but it will frequently happen that the patient is first seen in a state of collapse, to which re-action never succeeds. Sometimes pain in the head will be complained of as being very severe; but more frequently, however, it will be very slight, and not unfrequently altogether absent. Occasionally great giddiness will prevail. There will almost always be pains of the back, loins, or limbs, with pain in the chest, extending along the course of the *oesophagus*, from its commencement even to the stomach; and this pain will be said to be of a burning description. The state of the tongue varies greatly, it being at one time hard and dry, like a chip, and of a dark brown colour; the patient being unable to articulate for want of saliva. At other times the tongue will have a white centre, with edges of a bright red; and, still more commonly, in the worst cases, the tongue will be altogether without fur, and of a deep blood-red colour, and either very much enlarged and sponge-like, or elongated and contracted at the tip. There is generally thirst and a desire for cold liquids. The bowels are, for the most part, deranged; sometimes constipated, and sometimes, on the other hand, there is slight purging,

attended with griping or tenesmus. The red appearance of the tongue, and the pains of chest, back, loins, or lower extremities, may be considered as the truest characteristics of the existence of the disorder." 203.

It is not a little remarkable that a grand jury of tradesmen was set up in June, 1829, to investigate the remote cause of the epidemic, and its mode of propagation !! This jury, after mature deliberation, no doubt, came to the following conclusions—1st, that the then unhealthy state of Freetown was to be attributed to the landing of slaves from prize-ships in the centre of the town—secondly, to dead horses and cattle thrown into the water—and, thirdly, to the existence of certain slaughter-houses too near high water mark. All these allegations are denied by Mr. Boyle ; but his refutation of them need not detain us here. The opinions of the grand jury died quickly away in consequence of a new idea being started, which occupied the attention of all classes. This was the importation of the epidemic through the medium of His Majesty's ship Eden. It was ascertained that previously to the Eden's arrival in Sierra Leone, the only complaints which prevailed in that vessel, were diarrhoea. But she was found to be rather dirty, and the medical examination considered that she brought the seeds of the fever which broke out in her at Freetown, from Fernando Po. Other sources of the epidemic were now searched for and found in certain schooners or slavers that had arrived in the colony about the time the epidemic broke out. A full investigation proved that no other complaint prevailed in these slavers besides *ulcers* ! But we cannot follow our author through all the absurd creeds of importation which prevailed in Sierra Leone at the above period. One would suppose that the colony in question ought to be the last in the world to accuse other countries of exporting diseases into that quarter! We cannot resist, however, the introduction of a document drawn up by a mixed commission, partly civil and partly medical, sent to the Bullom shore, to ascertain whether the epidemic of Sierra Leone was confined to that port alone.

"Narrative of a Visit made to the Bullom Country for the purpose of acquiring Information respecting the Epidemic Fever of 1829.

Apprehensive that political motives, in regard to the character of the country, and with respect to the effect which might be produced on their trade, might induce the natives to hesitate to make us acquainted with all they knew, we took with us a few trifling presents for the purpose of rewarding truth. Thus furnished, we proceeded, at an early hour, on the morning of the 26th of July, to Dalla Moodie's residence, which is situated in a native town, named Medina, and is distant from Freetown about nine miles. On explaining the object of our visit, that chief expressed his readiness to give us all the intelligence he possessed, and we soon proceeded to business. Several messengers from the interior were with Dalla Moodie at the time, and we had speedily the satisfaction of finding that there was no lack of the information sought for. In order to facilitate our inquiries, we took with us a chart. Dalla Moodie soon shewed that he understood the relative situations of the four quarters of the globe : and, with the assistance of that knowledge, he rendered clear and comprehensive his explanations of places and local situations, and all such matters. When his recollection failed, he referred to manuscript writings in Arabic, and to persons around him from the interior. In describing his communications, no attempt will be made to adhere to his particular language, but the facts detailed will be faithfully conveyed. The information with which he furnished us was to the following effect:—

' In cutting the last crop of rice in November and December, 1828, the usual heavy tornadoes, which generally blow with great force at that season in the north-easterly direction, did not prevail. This circumstance was noticed by the natives generally; who, on the absence of those winds, at the periods above stated, always apprehend that the ensuing season will be particularly unhealthy. During the prevalence of the harmattan winds the air is impregnated, in a considerable degree, with an inpalpable sand; and, after their cessation, the leaves of trees, &c. are found covered with it. These leaves are ordinarily cleared of the sand by the succeeding tornadoes, which set in about the month of April; but, if the latter are not sufficiently strong, the sand, previously so deposited, remains; and this circumstance, whenever it occurs, is universally acknowledged, amongst the natives, as a certain sign that the following season will be unhealthy. This particular omen was observed by the surrounding people this year, who, in each town, consistently with their accustomed habits on such threatening occasions, contributed, according to the means of the respective individuals, a sum, or rather goods equal to a certain amount, for alleviating the anticipated necessities of their poorer brethren.

After cutting the rice, the stubble is always left on the ground, and, of course, becomes gradually decomposed, and emits more or less extensive exhalations of vegetable *malaria*; for the grain (the rice) is generally grown in low swampy situations. The ordinary, and, indeed, necessary consequence of this occurrence is sufficiently injurious, but it was greatly aggravated this year by premature setting in of the tornadoes, and the unusually early fall of frequent showers of rain. This irregularity in the seasons, in addition to increasing the usual malaria, did not allow sufficient time for burning the bush which had been cut down on large tracks of land, for the purpose of their being sown with rice; and the bush, being left exposed to the atmosphere and the weather, the natural consequence was, that it soon became so many masses of putrid vegetable matter, constantly emitting the most noxious and fatal exhalations, which were generated by the sun and partial rains, and dispersed according to the frequency and violence of the tornadoes. The natives thus accounted for the extent and fatality of the disease; and their reasoning appears to be convincing.'

' The sickness, with which the colony of Sierra Leone and the surrounding country have been so fatally afflicted, first made its appearance in Sangarrah, a country in the interior, about thirty days journey, in a north-east direction from Medina, the residence of Dalla Moodie. The fever broke out at Sangarrah about Christmas, 1828, and more chiefs have suffered from it there within a few months than were ever before recollectcd to have suffered, from a similar cause, in as many years. Sangarrah is a low marshy country, covered with jungle. Bantoe, lying to the south-west of Sangarrah, is also said to have suffered exceedingly. Out of twelve men sent out in March to hunt elephants, only one returned alive, the others having died in the forests from the effects of the unhealthy condition of the atmosphere. Between Sangarrah and Foutah Jallon, whole villages have been nearly depopulated.

From Laheer, and down through the Mandingo country, travelling in a south-west course to Fouricaria and Melicorree, the number of chiefs that have died is unprecedented; and, amongst the people generally, the loss has been immense. Much sickness prevailed in the Foulah country; but, owing to its being better cultivated, and composed more of hill and valley, it has not suffered to so great an extent as Sangarrah, where the fever broke out.

The symptoms at the commencement of the attack were, a sensation of cold, followed by pains in the chest and region of the stomach, and sickness, with occasional vomiting; pains in the head and back, attended with loss of appetite. Matter ejected by vomiting was sometimes yellow and sometimes black. Hot skin and great thirst; state of tongue not known; no sleep; delirium and sudden starting. Fires were much used in the houses, and, as the natives believe,

with great advantage. To promote perspiration appears to have been a great object. Cathartics freely administered. No other treatment for the purpose of cure was very clearly expressed, except with reference to the restoration of strength.

The number of inhabitants at the village of Yongroo, in the neighbourhood of Medina, was not accurately known; but Dalla Moodie was himself aware of four deaths having occurred there. His own town, Medina, was, and has been healthy.'

: Such was the result of the visit to the Bullom Shore; and, from further and rather extensive inquiries of the natives from various parts of the main land, it was fully ascertained, that a fatal epidemic fever had prevailed to great extent in the following countries amongst their respective tribes—namely, Bullom, Porto Logo, Rokelle, Scarcies, Mellacoree and Foolah. Those from whom these statements were obtained, were unanimous in the opinion, that the disease proceeded from the eastward, or, agreeably with their own account, from where the sun rises.

' From all the descriptions given, and the facts obtained, relative to the comparative mortality in the vicinity of the colony, it appears that it was greatest in the neighbourhood of Porto Logo, and down to the swampy tongue of land which separates Porto Logo from the small Scarcies; thence along the bank of the large and small Scarcies,* and across the country to Mellacoree and Foreecarreah. The banks of the Large Scarcies and of the Mellacoree, in particular, are much intersected with creeks lined with mangrove, and generally ending in swamps, which are always overflowed in the rains; and, after their departure, emit the most offensive and most unhealthy odour.

If the people from any of the countries named were asked what the sick persons complained of, they replied, of fever—' his skin hurt him, his head hurt him,' and ' his middle (his back and loins) hurt him.' Some supposed the disease was originated by witchcraft; the witch causing a poisonous atmosphere, the atmosphere still the immediate promoter, to rise out of the ground and to act on those whom she disliked.

From messengers from Timbo, in the beginning of August, it was ascertained that an epidemic prevailed there twelve months previously to that date, and that it had then ceased only four months. The complaint was described by these people as being attended with pains in the head, back, and loins, with a hot skin and black tongue. In the advanced stage of the complaint the gums and tongue exhibited the colour of blood; and, it was added, that some threw up a black fluid like a mixture of powder.

The Timbo people believed the sickness took its origin in the attempt at clearing a swamp in the neighbourhood of Timbuctoo, and that it thence spread to Jenni, from Jenni to Foota Tauro, and thence to Footah Jallon. It was also understood to have spread in the neighbourhood of Tamassoo, Tambacca, and Kissy Kissy.'

The foregoing information appears to be so conclusive, as to the origin and original nature of the disease, that further discussion upon those points must be unnecessary. That there are differences in the accounts given by the natives is true, but they do not amount to discrepancies of such a magnitude, as at all to invalidate or shake the one leading supposition and conviction—that the epidemic fever, which raged so fatally in Freetown in 1829, was immediately caused by peculiarities in the seasons—originated in the interior—was borne to Free-

* "It is important here to remind the reader it was at the Scarcies that the second and third cases of epidemic were contracted, which occurred on the 4th and 9th of May in Freetown."

town by the north-east winds—and, in its primary and true character, was not contagious.” 258.

The good folks of Freetown, however, from the Governor (Major Ricketts) downwards, became panic-stricken, and “*sauve qui peut*,” was the order of the day, notwithstanding the official opinions of all the medical officers of the colony that the epidemic was non-contagious!

“ That great apprehensions of contagion prevailed, and that personal safety was much consulted, is beyond all question ; and the attempt made to stay the fear was unfortunately ineffectual. The facts are, that, soon after the publication of the above medical opinions, the two army medical officers were reported sick ; fever cases became more general ; a few individuals retired from the colony ; the governor went to the military barracks ; and many of the inhabitants laboured under the dangerous influence of a prevailing panic. Misstatements went abroad respecting the state of the gaol ; in consequence of which, the then Chief Justice declined to hold the sittings of Quarter Sessions in the court-house situate over that establishment, and exhorted the Grand Jury, in a public speech, not to enter the gaol without each juryman being supplied with a bottle of chloride of lime, which, in procession, they were to sprinkle in all directions.

In this state of circumstances it became no easy matter to brave the besetting difficulties amongst a deserted and consequently disheartened community ; for, as it is with soldiers in the field of battle, so is it with the subjects of a community when surrounded by sickness ; they will quail, fly, or sink in despair, if the chief absent himself from his post.” 268.

With this curious extract we must close our imperfect notice of this valuable volume. To all army and navy surgeons, who may be destined to visit tropical climates generally, and the African Coast in particular, Mr. Boyle’s volume is absolutely indispensable. And, indeed, we strongly recommend it to the perusal of our brethren in all countries.

VII.

OBSERVATIONS ON MENTAL DERANGEMENT ; BEING AN APPLICATION OF THE PRINCIPLES OF PHRENOLOGY TO THE ELUCIDATION OF THE CAUSES, SYMPTOMS, NATURE, AND TREATMENT OF INSANITY. By Andrew Combe, M.D. 12mo. pp. xxxvi, 392. Edinburgh and London, 1831.

WHOSOEVER desireth to retrace the movements of an ingenuous mind through the stages of a candid and philosophical investigation of doctrine, may derive instruction from a fair perusal of Dr. Combe’s introductory statements : we advise all students of physiology to examine these statements, and the note appended to them, with a spirit disengaged from every prejudice, and unembarrassed by the hebetating obliquities of preconception.

“ Dr. Combe’s “*Observations*” are distributed into ten chapters : in our analysis of his book, we shall adopt the same arrangement.

CHAPTER I.—General Remarks on the Functions of the Brain and Nervous Sys-

tem. Dr. Combe receives, as self-evident, the proposition in physiology, that every distinct organ in the animal economy performs an appropriate function ; and, as a necessary consequence, that every distinct function is executed by an appropriate organ ; hence, wherever a plurality of functions has an obvious connexion with a part, that part may be regarded as having a compound structure. On this principle, therefore, whenever we discover in any animal, either a new organ, or an addition to an organ previously ascertained in other animals, we may conclude that a new function, or some modification of, or addition to, a function already known, remains to be distinguished ; and that, on the other hand, where we perceive a new function, or a modified state of an old function, there we may infer the existence of a new organ, or of an additional portion of organ, by which the new function, or modification of function, is exercised. Many years ago, Dr. Gall began to apply this principle, practically, in his researches concerning the cerebral organs ; and, by this means, evinced how it can be employed in elucidating the anatomy and physiology of the brain. Guided by this original principle, indeed, he completed the demonstration, by arguments, analogies, and facts innumerable—that the brain is an aggregate of parts, each of which resembles the rest in substance and structure, but is nevertheless essentially distinct, and endowed with a naturally different function.

Many circumstances, in health and disease, had concurred to induce a general belief, even in very remote times, that the cerebral mass comprises an aggregated system of organs, every one of which fulfils its own peculiar office : Gall, however, was the first to convert this belief into a certain position ; indeed, the different cerebral terminations of nerves, seem sufficient to imply a diversity of function in the different parts of the brain with which its proper nerves are associated. Similar reasons, in like manner, render it probable that the apparently homogeneous nervous bundles are complicate, with each elementary part having a peculiar determinate use. This notion had long been entertained by reflecting men ; but it was first promulgated as a principle, about twenty years ago, in being submitted for judgment to the French Institute and the scientific world, by two physiologists, who have merited a just and honorable reputation by their discoveries in the anatomy and physiology of the nervous system : their original perception of this principle suggested those philosophical inquiries, from which has resulted—our knowing the natural divisions of the nervous tissues and the plurality of their functions. Thus, they said—“it can happen only, when anatomy and physiology are founded on each other, that our knowledge of the nervous system will attain the highest degree of perfection.”* Again—“evidently the nervous system is not simple and uniform ; it should be divided according to its *chief* functions, and each of its principal divisions ought to be subdivided according to its *particular* functions.”† Again, “the nervous systems differ from each other in their origin, their structure, their colour, and their solidity.”‡ Again, “nerves differ from one another in the variety of their configuration ; thus the nerves of the senses have no resemblance, one with the other, in their colour, their consistence, their form and their texture : often, the different filaments of the same nerve are quite visibly dissimilar : not only do the different nervous systems, but also the different fibrils of a nerve even, arise from distinct portions of the grey substance situated in different places ; all these peculiarities are the same in the same nerves ; hence, as a cause, there must be a primitive difference in their internal structure, and, by necessary consequence, an essential diversity in their functions.”§ Again, “the nervous system must be divided and subdivided : each part of these divisions and subdivisions has its

* Anatomie et Physiologie du Système Nerveux en général, et du Cerveau en particulier, par les Drs. Gall et Spurzheim, 1810. Tome I. p. xxii.

† Ibid. p. 11.

‡ Ibid. p. 75.

§ Ibid. p. 128.

peculiar origin."* Again, once more, "there is a difference in the nerves of motion, and those of feeling, because the same nervous fibres do not go to the muscles and to the skin, and each of these parts performs peculiar functions ; the nerves necessary to motion, cannot propagate the impressions of the sentient nerves, nor these the impressions of the nerves of motion : from observations, anatomical and physiological and pathological, we infer that the nerves of motion and feeling are different."† Adopting or discovering this principle, Sir Charles Bell and Dr. Magendie applied it successfully in their experimental researches to ascertain the primary differences and functions of nerves ; and, by many conclusive evidences, made a perfect demonstration of the fact—that the nerves of sensation and those of motion, are as distinct in their origins and their distribution, as in their offices.

Dr. Combe, at p. 7, illustrates the doctrine clearly,—that, since the brain is the centre to which all external impressions must be conveyed before *sensation* can take place, and from which all *volition* must proceed ; therefore, every nerve which serves to conduct these impressions *to*, or to transmit the commands of the will *from*, the mind to a distant organ, necessarily requires to be in free communication with the brain, either by direct origin from some one of its constituent parts, or by the medium of the spinal cord, with which some parts of the brain are intimately connected, both in structure and function. Hence, therefore, to effect *sensation* or the *perception* of impressions made on the sentient extremities of the nerves, a consentaneity of action, and a freedom of communication between them and the brain, are indispensably requisite. By the right application of this principle, we shall often be able to retrace, to distant organs, the essential causes of cerebral disturbance.

These remarks, the Doctor continues, apply to all the nerves of animal life, internal as well as external : it is always the brain, not the nerve itself, that feels the affection ; of this last, the nerve is only the conductor. On this account, then, the action of the brain is modified by every change in the condition of the nervous fibres ramified on every part of the body : hence, consequently, a reciprocal communication and influence are essential to the due exercise both of the brain and nerves. He adds illustratively, p. 9.—

"The brain, being truly the seat of sensation, it happens, that if, by any internal cause, such as disease, that part of it which is in correspondence with a nerve, be excited in the particular way in which it is acted upon by the natural stimulus from without, the same sensation will arise in the mind as if the external were actually present, and making its usual impressions on the nervous filaments, and a belief of its real existence will accordingly take place, unless the mind be informed by other faculties of the source of the error. Such, accordingly, is the origin of the many odd feelings,—of the cravings of hunger without real want of food,—of the creepings under the skin,—of the voices constantly whispering into the ear—of the deceptions of sight,—and of the all-pervading smells and tastes so commonly complained of in madness, and sometimes also by persons in sound mind ; the only difference being, that the former believe in the existence of an external cause to excite those sensations ; and that the latter perceive their morbid origin, and refuse to obey their impulses."—These observations comprise much practical instruction : so, likewise, do those that follow. "In health," says Dr. C., p. 10, "the stimuli to which the nerves are adapted, and of which they transmit impressions to the brain, are so perfectly in harmony with their constitution and structure, that their action is carried on almost unconsciously. But, if disease attacks the organ or part on which they are ramified, the state of things instantly changes : the nervous filaments,

* The Physiognomical System. By J. G. Spurzheim, 1815, p. 13, 14.

† Ibid. p. 23, 24.

stimulated perhaps to excess by great irritation in the part diseased, then transmit to the brain the same excess of stimulus which they receive, and rouse the cerebral part with which they are more immediately connected into inordinate action : and, if the irritation be of long continuance and considerable severity, and the organ be one strongly connected with the brain by a multiplicity of nerves, or the importance of its function, the inordinate cerebral action thus induced may so far affect the structure and functions of the brain itself, as to excite in it a morbid action, which will go on independently of the cause which produced it ; and this is in reality one of the sources of cerebral and mental disease."

Dr. Combe now arrives at the following important conclusions. 1st. That, as every single part is capable of performing one function only ; and, as every system of nerves arises from corresponding nervous masses performing functions analogous to its own ; it follows, that the higher we rise in the scale of living beings, and the more numerous the functions with which each is endowed, the more perfect and the more complicated will their nervous organization become. 2d. That, when we consider the number and perfection of the senses, and the manifold propensities which man possesses in common with many animals, having distributed among them what are united in him, and the various moral and intellectual faculties which pertain to him exclusively—the natural and irresistible inference is, that he must have a brain and nervous system complicated and perfect in structure, in exact proportion to the higher perfection and more numerous endowments which the Creator has bestowed upon him. 3d. That, on resorting to observation, we discover in confirmation of these inductions—that, in precise proportion as we ascend in the scale, and the animal acquires a sense, an instinct, a power, so do its nerves multiply, and “its brain improves in structure, and augment in volume, each addition being marked by some addition or amplification of the powers of the animal, until in man we behold it possessing some parts of which animals are destitute, and wanting none which they possess,” hence, *we are enabled to associate every faculty which gives superiority, with some addition to the nervous mass, even from the smallest indications of sensation and will, up to the highest degree of sensibility, judgment, and expression.** Being, thus, at once the seat of intellect and of instinct, the centre of sensation, and the chief source of nervous energy, and therefore a complex organ, the brain is admitted, by almost all modern physiologists, to receive successive additions in different animals as they ascend in the scale of creation, and become endowed with additional instincts. Animals of the lowest class, which manifest no traces of sensation, have neither brain nor nerves ; but wherever a *will*, a *rational will*, depending upon a choice between different impulses or motives, exists, there a brain exists also ; and this becomes complicated and perfect in proportion to the number of instincts or faculties with which the animal is endowed. It appears, indeed, the Doctor adds, that some of the lower animals have particular parts of the brain more fully developed than these parts are in man ; at the same time, however, they have particular senses more acute, and particular instincts more powerful, in correspondence with these particular parts :—but, then, no animal has a brain consisting of so many parts, or so fully and perfectly developed, as is that of man ; and no animal possesses so many powers of feeling and intellect as those which constitute the human mind. Finally, here, the simple fact—that mind is incapable of manifesting itself except through the instrumentality of brain—is, in one sense, logically sufficient to settle this question ; for, if the human brain did not comprise parts which are inexistent in the brains of ani-

* These remarks, in Italic letters, are taken from the Edinburgh Review, No. 94, p. 442, 3 : having transcribed them, Dr. Combe exclaims, in amazement, “Who could have expected to find such doctrine in such a place?”

mals, it would be able to manifest those qualities only that man and animals have in common :—just as, without eyes, man could not enjoy vision ; or without ears, execute hearing, however perfect the internal or incorporeal constitution of his mind might be.

According to our author, the fundamental principles of the new physiology of the brain are—1st. That the mind is endowed with a plurality of innate faculties ; 2d. That each of these faculties manifests its own affections, through the instrumentality of an appropriate organ, of which organs the brain is a congeries, aggregate or system ; 3d. That the power of manifesting its affections, possessed by each faculty, bears a constant and uniform relation, *CÆTERIS PARIBUS*, to the size of the organ or part of the brain with which it is more immediately connected ; 4th. That it is possible to ascertain the relative size of these different organs during life, by observing the different forms of the skull to which the brain gives its shape. By most physiologists, the first and fourth of these propositions are admitted. Dr. C. in his first chapter, supports the second by the strongest *probable* evidence ; and we can obtain the *demonstrative* only by observation in Nature. He regards the third as having a very important practical relation to the pathology and treatment of insanity. We propose to accompany him in his discussion of this proposition ; and to examine with him its direct and analogical evidence.

CHAP. 2.—*Influence of Organic Size on Energy of Function, particularly as applied to the Organs of the External Senses and Brain.* We are sorry that we must pass over this chapter untouched, though it contains much interesting matter.

CHAP. 3.—*Mental Derangement is always Symptomatic of Cerebral Disease.* Many very wise, and some very witty, persons occasionally seek a diversion to their idleness, in ridiculing the uncertainty of opinion and the inconsistency of doctrine with which medicine is too often petulantly charged. Nevertheless, when their own lives come into danger, these persons solicit assistance with an alacrity quite indicative of their serious belief—that medical science has a foundation in the nature of things and that its professors possess an extent of certain knowledge, by the right application of which the lives of mankind may be prolonged, and their miseries greatly mitigated. From this fact, the conclusion is, that the imputed inconsistency does not arise from the absence of invariable and permanent principles, according to which the various functions of the human body are regularly carried on, and according to which their disorders ought to be treated ; but the inconsistency arises entirely from our imperfect acquaintance with these principles, and with the numerous modifications which they undergo, from the influences to which man is exposed : consequently, in proportion as our knowledge shall become more extensive and accurate, so will the contradictions and inconsistencies which have brought obloquy upon medicine gradually disappear. It is encouraging, then, to know that, in pursuing medical inquiries, our difficulties are ascribable chiefly to the latter cause—and to feel assured that the mental and bodily constitutions of man did not come from the CREATOR's hands undefined or imperfect ; and that all the animal functions are regulated by fixed and determinate laws, and have fixed and determinate relations to every class of external objects. Now if this view be correct, and if the causes of disease, and the agents employed for their prevention and cure, thus have definite properties, and act upon a system regulated by definite laws, then medical science must necessarily advance concomitantly with the progress made in the discovery of these laws and of their relations to each other :—thus every new error into which we may fall, instead of deterring us from pursuing our investigations, becomes a new beacon to guide us past some of the dangers to which we were formerly exposed ; whereas, if medicine were an art without principles

permanent as Nature herself, its advancement would be as hopeless a task as ever attracted and deluded the ingenuity of man. A conviction that medicine rests upon fixed principles, Dr. C. observes, is nowhere more valuable, than as applied to the diseased manifestations of mind: for instance, it is an established principle in pathology, that every derangement of *function* is always accompanied by a disorder, either in the structure or in the mode of action, of the *organ* which performs it, and without the removal or cure of *which*, the *function* cannot be restored to its healthy state. Acting on the faith of this law of the animal economy, we almost instinctively begin our examination of a patient, with an endeavour to find out what functions are chiefly vitiated; through them, we go back to the organs which execute them; and *there*, by local and other symptoms, we seek the kind of disease which has caused the aberration of function:—by following this procedure, we often succeed in ascertaining the seat, nature, and method of cure of the disease requiring our attention. When, however, we look to the notions and modes of proceeding which have long prevailed in regard to insanity, we often see a melancholy reverse of the picture. From ignorance of the *fact*, or from want of confidence in the *fact*, that the *principles* of medicine are *immutable* and *permanent* in their operation, many persons are contented with viewing the disjointed phenomena of mental derangement as the inscrutable consequences of an affection of the immaterial principle of mind, or as a particular dispensation of Providence, which they could not be expected to understand or to remedy: accordingly, while this view continues to influence practice, all sorts of incongruous measures will be adopted against the miserable sufferers, and the short fit of their frenzy be too often converted into irremediable mania or hopeless fatuity. Were, however, the law of the constant connexion between the state of an organ and the mode of its function more intimately known, and the universality of its application confided in, it would lead the observer to investigate the condition of the organs, whose function it is to manifest the mental faculties—to look *there* for the seat of the morbid action, and thus to determine its nature and treatment on rational, inductive, and consistent principles:—that the brain manifests the mind's faculties, is a proposition clearly demonstrated; hence, the true pathology of insanity is to be sought in the history of the various diseases to which the cerebral structure is liable.

"Knowing nothing of the mind's nature," says Dr. Combe, p. 65, "and, in this world, having no means of knowing any thing of its *nature*, as it exists independent of, and separate from, the organization with which it is connected during life, we can only study the capacities and modes of action which it exhibits in its combined or compound state; and, to attempt any thing beyond this, would be not only unnecessary, but utterly useless labour. We cannot reach the *principle* of mind, to modify its qualities or manner of being; we can reach it only as acting through the medium of, and influenced by, its material instruments; and, consequently, all attempts to improve its powers, and to extend its limits, must be conducted with a constant reference to the organic conditions under which it acts, otherwise they will to a certainty fail of success. During life, indeed, the closest relation obtains between the mode of action of the various mental powers and the condition of their respective organs—every change in the state of the one being always accompanied by a corresponding change in the state of the other. All the faculties of thought and of feeling are feeble and inefficient in infancy—not from any defect in the immaterial principle of mind, but simply from the imperfectly-developed condition of the organization which, *in this life*, is required for their adequate manifestation. Some animals see distinctly immediately after birth, but hear very imperfectly; others hear, but do not see; and others, again, are almost insensible alike to sounds and to vision. Every body knows the explanation of these facts; thus, in one animal, one *organ* of sense is early developed; and, in another, a different *organ* is first matured. In infancy, in like manner, some *internal* faculties, the *organs* of which

are early developed, precede in maturity others, whose *organs* are not fully developed till much later in life. In youth, the *observing* powers preponderate in energy and activity, and the corresponding cerebral *organs* bear a visible predominance over those of the *reflecting* faculties which come later to maturity—thus demonstrating, at every step, the intimate connexion between the mode of action of every faculty, and the condition of its *own* material organ. If we look at the mind as a *whole*, we shall find it following the same rule of progression: in infancy, the mental powers are feeble and vacillating in their exercise; vigorous and enduring in manhood; and again deficient in energy and vivacity in old age—in exact correspondence to the progressive changes in the organization of the brain, from that of very imperfect structure in infancy, to that of progressive maturity and decay, as occurring successively in youth, in manhood, and in old age. Moreover the effects of fatigue, and the necessity of sleep for recruiting the mind as well as the body; the changes in thinking and in temper caused by the corporeal states of repletion and of hunger; the effects of opium and alcohol; the changes, the almost total abolition at one time, and astonishing excitement, force, and irregularity of action at another, of the different powers of the mind, in consequence of bodily disease or of accidents, shew incontestably the never-ceasing dependence, *in this world*, of mind upon brain for its manifestations. Not only, however, do the mental powers follow the regular and comparatively durable changes thus brought about in the condition of their respective organs; but they are also affected, in an equally evident manner, by every change, however slight, and of however short duration, to which the organization is subject, either from external or internal causes. The touch of a hair upon the skin, the falling of a single ray of light upon the eye, or of a single atmospheric pulse upon the ear, are sufficient to cause corresponding changes in the state of the mind. Sudden compression of the brain is well known to deprive the patient of all mental power; and it has even happened, again and again, that where an opening existed in consequence of a fracture of the skull, by pressing the brain with the finger, consciousness was destroyed, to be restored on removal of the pressure: and repetition of the experiment was attended with precisely the same results."

Any organic part may be brought into a morbid state, by causes acting directly upon its function, or by causes immediately affecting its substance; thus, inflammation of the eye may be excited either by stimulating its function with too much light, or by sand, or lime, or cold air affecting its surface. Now the brain offers no exception to this law: the fact, indeed, explains how derangement of the mental faculties came to be considered apart from its corporeal cause. One person, from a reverse of fortune, great affliction, disappointed love, or intense study, becomes insane or delirious, with symptoms of a cerebral affection—this presents an instance of excitement of function inducing disease of the organ. Another person, from an injury, from a *coup-de-soleil*, or from intoxication, falls into the same state; this is an example of the same result being consequent on the direct application of external influence to the organ itself. Now the true relation between the two states was not sooner perceived—*because* it was always forgotten that the function of the brain is to manifest the mind; and that, in so far as the manifestations of the mental powers are concerned, the agency of the brain is as indispensable as if it were the mind itself. These facts bear upon the subject of imperfect or disordered manifestations of the mind: thus, hitherto, a singular and unfortunate distinction has been made between derangements of the *external* and those of the *internal* faculties of the mind; the external organs of the senses having long been known, we justly ascribe every disturbance of their functions to an affection of their material organs, and our efforts are directed to the discovery of the nature of the particular affection then existing; and by this discovery our treatment is regulated: but, when an internal faculty, of feeling or of thinking becomes deranged, *instead of following the same rational*

course and ascribing its aberration to an affection of its cerebral organ—we generally content ourselves with the simple but vague affirmation—that the mind is deranged, and have not cared to discover the particular organic cause of the disturbance of function. Between the external and the internal faculties, there is really no greater difference than between one external sense and another: all are equally powers of the mind; they differ only in having different functions to perform, and in each having an organic instrument fitted for the exercise of its specific function: thus, to enable it to see, the mind requires an optic nerve with an external eye, because light is an external existence with which it must be connected; and, in like manner, the mind requires an internal cerebral organ to feel the sentiment of justice, because justice is not an external quality, but a mental or internal relation: again, the mind requires an external organ to enable it to hear, because the vibrations of the air are external existences with which it must be connected; and, in like manner, the mind requires an internal organ to feel the sentiment of pity, because pity is not a quality of matter, but simply a mental state or relation. From all this, it is manifest—that the organs of the five *senses* are merely parts added to the other cerebral organs in order to connect the *perceptive* faculties with the external world: the powers of *seeing, hearing, tasting, touching and smelling*, are neither more external to, nor less intimate parts of the mind, than any other of its powers; and the well-being of the brain is alike necessary to the right exercise of them all. Evidently then, if the manifestations of the mental faculties, in a state of health, depend on the healthy condition of their organs, external and internal, and if a change in the state of the mind attends even the slightest alteration in that of the brain—it follows, that a morbid condition of the organ of mind must be attended with disordered manifestations or mental derangement,—and that, without the previous removal of this organic cause, the mental health can never be re-established.

Such doctrines as the foregoing, although enforced by observation and confirmed by experience, are denounced by the unthinking and the prejudiced as dangerous to religion: by such persons it is argued—that to refer insanity to an organic cause, is to confound mind and matter together; to teach that the brain is mind; and, consequently, to destroy the strongest proof of the soul's immortality. Happily for humanity, however, truth and reason are as imperishable as mind; and, under their influences, it is now widely acknowledged, —that it is the old and false doctrine of the mind being subject to disease, which is justly chargeable with the apprehended danger,—and that, if the soul's immortality can be proved in any way by *reason alone*, this proof must rest exclusively on the grounds here advocated. The relation thus shown to exist between the state of the mind and its *material* organs readily explains why—the *immaterial principle remaining essentially unchanged*—the mind develops its powers as we advance from infancy to manhood and declines as we descend from manhood to old-age,—why it falls asleep in the night, or loses consciousness from a blow on the head,—why its manifestations are disturbed by intoxication, or deranged by disease,—and why it is characterized in *one* by the weakness of idiocy, and in *another* by the strength of genius. Moreover, the facts—that the mind never manifests itself in this world except through the *instrumentality* of corporeal organs, and that the *condition* of these organs influences the *quality* of the manifestations—afford an easy explanation of the origin of mental derangement and of the possibility of its occurrence without endangering the mind's *essential principle*. Through the *instrumentality* of the eye and the optic nerve and a portion of the brain, the mind *sees*, just as it *thinks* or *feels* through the *instrumentality* of other portions of the brain: and, as changes in the *condition* of the organs of sight deteriorate or destroy the *power of vision without any affection of the principle of mind*; so, in like manner, do changes in the *condition* of the brain derange or destroy the *power of feeling* or of *thinking*, and still the

mind itself remains essentially unimpaired. On the other hand, if we ascribe the varying mental states to variation in the *immaterial principle*, unconnected with any corresponding organic cause, then must we hold also—that the defective mind of the idiot from birth, has been purposely created thus mutilated and limited in powers—that it is the mind itself, and not the body, which is disordered by wine, set to sleep by opium, and apparently annihilated by a blow, though the wine and the opium and the blow all act perceptibly on the *body*,—that it is the mind itself, and not its corporeal organ, which is weak in infancy, strong and active in maturity, and again feeble in old age,—that it is the mind itself, and not its corporeal instrument, which is subject to delirium in fever and to the manifold other forms of disease which impair or derange or suppress the manifestations of the mind's constituent faculties. Admit we all this, and at what point are we to stop? If the *soul*, the immaterial principle, be thus subject to disease and to *apparent annihilation* and to changes interminable, it is impossible to draw any evidence of its immortality from *reason alone*: but, on the view that it is the mind's *organ* which suffers disease and disturbs the mind's *manifestations*, the doctrine of the soul's immortality remains open to every *rational proof* that can be urged in its favour.

Mental derangement, then, originates in a disordered state of the brain's functions: this state arises from some morbid action in that organ, and may or may not involve, at the same time, the functions and organs of the external senses: frequently, however, it exists without any such complication: this morbid action must be remedied before the mind's alienated manifestations can be removed. Dr. Combe, on p. 74—5, renews, concentrates, and enforces the evidences by which his fundamental proposition is demonstrated: thus, “by constantly drawing attention to the connexion subsisting between the *power* of manifesting every mental faculty, and the *condition* of its particular cerebral organ, an enlightened physiology places derangement of the mind's internal faculties in the same relation to the organic affection producing it, as that wherein it places the derangements of the five external senses. *Sight* is never impaired nor *hearing* destroyed, unless the organs which execute these functions, are diseased; in like manner, *thought* and *feeling* are never deranged, unless the cerebral organs by which they are manifested, have undergone some morbid change; and as sight is injured by a great variety of morbid alterations in the eye or its nerves, so are the internal faculties of the mind deranged by a great variety of diseases affecting the brain. Even if we had not *direct proof* of the dependence of mental derangement on various cerebral affections of a different nature, the force of *analogy* is still so strong as of itself to establish the fact, and to satisfy the most sceptical enquirer—that *insanity is not a single and unvarying disease*. Every affection to which an organ is liable may derange its function, and therefore disturbance of the functions of the brain may attend a variety of different cerebral states, each characterized by its own symptoms and requiring its own mode of treatment. The eye, for example, is the external organ of vision, and any affection of the eye—*whatever its nature*—may derange its function and impair sight. The eye may be inflamed, or it may be distended with water, or opacity may cover its convex surface, or the optic nerve may be paralysed; and, as a consequence of *all* these states, impaired vision or blindness follows: impaired or destroyed vision is therefore not a specific disease, but a proof or symptom of the existence of some affection having its seat in the organs of sight, the real nature of which must be determined by other means. The ear is the organ of hearing; and all affections, of whatever nature, having it for their seat, may injure its function: the ear may be inflamed, or the tympanum may be ruptured, or the acoustic nerve may be paralytic; and, as a consequence, hearing may be destroyed: this also shows that impaired hearing and deafness are not diseases, but merely symptoms attending maladies which have their seat in the ear. The lungs are the organs of respiration; and all causes, of whatever nature,

affecting them, may derange their function and impede breathing : the lungs may be inflamed, or may be the seat of an extravasation of blood, or they may be compressed by water or air in the chest ; and, as a consequence, in all these cases, respiration may be impeded ; so that dyspnoea or difficult breathing is not a disease by itself, but merely a symptom attending diseases which have their seat in the lungs. In like manner, the brain is the organ of the mental faculties ; and any affection of whatever nature, having the brain for its seat, may disturb the cerebral function, or the manifestations of the mind : the brain may be inflamed, or it may be excited by wine, or compressed by water or by a fracture of the skull ; and, as a consequence in all these cases, the mind's manifestations would be disturbed. Derangement of these manifestations, therefore, is not a disease ; it is a symptom attending many different affections, which agree only in the single point of having the brain for their seat."

After shewing the practical utility of founding treatment on these views, the Doctor proceeds to say, p. 77—" But had the fundamental principle, that the brain is the *organ* of mind, and, consequently, the fact, that insanity always depends on a corporeal and cerebral cause, been recognized and kept in view, it would have at once been perceived that, as every departure from health in an organ must necessarily disturb its function in a greater or less degree, and, as the function of the brain is to manifest the mind, mental derangement could not be a specific disease, but must be one of the effects of whatever morbid causes disturb the action of that organ, and could, therefore, no more be considered as an individual disease than impeded respiration, impaired vision, or vitiated secretion of bile. Had the attention of the observer been closely directed to the study of the relations subsisting between the mental faculties and their cerebral organs, so many centuries could not have elapsed, and so little been added to our knowledge of a subject, in which mankind at large is so nearly concerned. Had insanity been recognized as a symptom of cerebral disease, the insane would never have been rejected and excluded from our sympathies as the detested of Heaven, nor would they ever have been tortured by the lash or the chain, or exposed to public derision. Had a glimmering of its true nature reached the public mind, we would as soon have thought of loading the gouty or the paralytic with reproaches and obloquy, and of curing them by the application of the bastinado, as of treating the maniac with the neglect, and often positive cruelty, which he once met with. The moment we know that madness is an effect of disease in the material organs, with which the Creator has connected the *principle* of mind, and that to this *infliction alone* are to be ascribed the waywardness, violence and impetuosity, which often characterize that state, our feelings towards the unhappy patient, and our attempts at cure, will be very different indeed from what they would be, were we still ignorant of its true nature."

Dr. Combe divides the affections of the brain which disturb the manifestations of the mind into two primary classes—1. Those diseases which are *ACUTE* in their character, rapid in their progress, and dangerous to life ; such, for example, are fevers, phrenitis, hydrocephalus acutus and apoplexy ; 2. Those which are *CHRONIC* in their nature, slow in their progress, and compatible with a prolonged existence ; such, for instance, are the various maladies which give rise to insanity. His remarks on this division are most instructive ; thus, he observes—In the former, from their being attended with local symptoms of great intensity, the derangement of the feelings and intellectual powers is universally and readily ascribed to morbid changes in the brain ; but, in the latter, where the symptoms are not so severe, and where the disturbance of the mental operations is equally manifest, though sometimes differing in character, the same connexion of the phenomena with their cause in the brain, is frequently not only unperceived, but resolutely denied. As it is of the utmost importance, in practice, to be aware of the relation subsisting between the two *classes* of cerebral affections—that the obscurities of the one may be relieved by the lights afforded by

the other, and that our attention may be directed, in both, to the local cause of the disturbance of function; the Doctor keeps this relative connexion in view throughout his work, and thus endeavours to advance the pathology of insanity in the same way as that of other diseases: in chronic affections of most other organs, he thinks we have greatly improved, if not altogether derived, our principles of treatment from observing the progress, and the remedies, of their acute diseases.

Having shewn that mere disturbance of a function is not an actual disease, but an effect of various and often opposite affections of the organ which performs it, and that mental derangement is not a specific disease, but a symptom of an actual cerebral affection, Dr. Combe concludes—that although the terms *mania*, *melancholia*, *insanity*, *idiocy*, and the like, may be used to designate the particular mental forms assumed by the symptoms, these terms ought to be entirely discarded as *names of diseases*, because their use serves to perpetuate the error, that they really note specific states, requiring in all cases a specific treatment: we ought rather to speak of the various maladies of the brain; just as in lesions of the lungs; instead of regarding *dyspnœa* as a positive disease, we go back to the local or organic affection, and speak of *pneumonia*, of *pleuritis*, or of *phthisis*, of which *impeded breathing* is nothing more than a symptom. In applying this principle to those affections of the brain which give rise to mental derangement, we shall at the first, from the excess of our ignorance, make a very poor appearance; but even in the attempt, says Dr. C. there will be the superlative advantages of keeping the very limited extent of our knowledge constantly before our eyes, and of stimulating us to unremitting exertion in the only path calculated to improve or increase it; whereas, he adds, it is no less true than melancholy, that the only use of our present nomenclature is to make us deceive ourselves, and rest satisfied with a *word* in the absence of an *idea*:—the method of naming the disease after the prominent symptom, without regard to the nature of the organic cause, lies at the root of all the confusion and contradiction that have encumbered the investigation of the cerebral affections which produce insanity.

By the evidences which prove that the brain is an aggregate of organs, each manifesting a distinct mental power, it is proved, also, that one or more of these organs may be injured or diseased, and their functions impeded or altered, without necessarily affecting the remainder. This explains how a person may be insane on one feeling or faculty, and sound on all the rest; and, consequently, how, when a different organ is diseased, the faculty or feeling that is deranged may be different, and the prominent symptoms be different, and yet the disease itself remain exactly of the same nature. Inflammation affecting the eye disturbs vision, because vision is the eye's function; and, affecting the ear, it disturbs hearing, because hearing is the ear's function; still, however, it is inflammation in both organs, and, in both, it requires the same kind of treatment. In like manner, morbid excitement of certain parts of the brain may produce ravings, violence, and fury: and morbid excitement of other parts may occasion fear, despondency, and melancholy; now this does not proceed from any difference in the kind of excitement; it proceeds from the circumstance, that each of these different parts executes a peculiar and different function; hence, also, it is, that both cases may require a similar kind of medical treatment; and, in so far, this view of the subject affords a simple and consistent explanation of all the various forms which insanity assumes, and leaves us free to observe with care, the nature of the organic lesion on which each kind of symptoms depends. Viewing the question conversely, on the principle—that the brain is a UNIT, the whole of which serves equally to manifest all the mind's faculties, we shall perceive the utter impossibility of explaining how it happens that, in a majority of instances, a few only of the mental powers are deranged, while the rest continue unaffected. If the whole brain were the single organ of mind, every part of it ought to concur in every mental operation, and all the faculties of mind—whereof the brain is

held to be the sole instrument—ought, in every case, to be equally deranged, and the patient ought to pass rapidly and often from an abyss of despondency to the abodes of bliss, or from a state of listless apathy to that of demoniacal fury. This, to be sure, is sometimes actually the case; but it is far more rare than that in which the mental affection is *partial*, and retains its characteristical features *unchanged*. The idiot, who to-day manifests strongly the sentiment of benevolence, or of veneration, or of pride, will not to-morrow, nor in a year, change the nature of his predominant manifestations; neither will the monomaniac, who to-day fancies himself a king, or possessed of boundless power and wealth, believe himself to-morrow a slave, or in wretchedness and want: nor will the rich lunatic, whose fear is that of dying from starvation, manifest the gaiety of one who considers himself the favourite of some supernatural power: such transitions of fancy, however, might have been expected—*had the brain existed as a unit, the sole organ of all the mental faculties.* Heterogeneous manifestations, and rapid changes from one class of ideas to another, do, indeed, sometimes occur, but then the *whole* brain, including *all* the organs, is diseased; this state, therefore, affords a true picture of the nature of insanity—such as it would necessarily be, in every instance, if the organ of the mind were *SINGLE*. So long, then, as we continue to advocate the *unity* of the organ of mind, we shall be constrained—in accounting for the variety of forms which derangement of so many mental faculties and organs may assume—to create a new malady for every change in the appearance of the mental symptoms; and, following the wide variety thus presented, to conjure up a list of mental diseases, numerous and complicated enough to damp the ardour of the most diligent and determined student, and, at the same time, running so much into each other, as to defy all attempts at discriminating or describing them. We may avoid falling into this portentous error, however, by investigating the *chronic* affections of the brain, in the same way as we study its more rapid and *acute* diseases. Regarding the delirium or mental derangement attending the *latter*, as a mere *symptom* only—and a most important one it is in the indications—we make use of it, and of all other means, to detect the *nature* of the organic affection; and, by this last, are guided in the application of our remedies. Let us follow the same course with the mental aberration, which forms so striking a feature of the *chronic* affection, and, ultimately, our success will convince us that we have entered upon the right road to improvement.

In another article, we shall complete our analysis of this very elaborate and ingenious work, which is not so much known in the profession as it deserves to be.

VIII.

TREATISE ON CHOLERA ASPHYXIA; OR EPIDEMIC CHOLERA, AS IT APPEARED IN ASIA, AND MORE RECENTLY IN EUROPE, &c.
By George Hamilton Bell. Second Edition, very greatly enlarged. Longman and Co. January, 1832.

We are rejoiced that this excellent work has reached a second edition—and that both enlarged and improved. The fourth section, on the propagation of cholera, is handled in such a masterly manner, that we have deemed it a public benefit to our readers to print it in our EXTRA-LIMITES, in order to give it an extensive circulation. In this short article, we shall chiefly allude

to the other new matter contained in the second edition, more especially as relates to the disease as it has occurred in the North of this kingdom.

When the epidemic broke out at Haddington, Dr. Meikle and Mr. Bell were deputed by the Edinburgh Board of Health to proceed, in company with Major Macdonald, to the new scene of invasion. The following was their report.

"On our arrival at this place, accompanied by Major Macdonald of the Central Board of Health, London, we found the Haddington Board of Health sitting, to which we were introduced by Mr. Riddell, Sheriff-substitute. The medical men of the town were in attendance (five*). The letter from the Secretary of the Edinburgh Board having been read, the President of the Haddington Board assured us of their willingness to co-operate with us in any inquiries we might think necessary, and we take this opportunity of observing, that this assurance was acted upon to the fullest extent.

We were informed that no new cases of Cholera had occurred since yesterday morning, and that there had been no deaths since the 28th. That six cases remained under treatment, three of which were almost well, and the others convalescent. That the medical men were convinced the disease was pestilential Cholera; but that every endeavour to trace its source had failed. At our request the medical men accompanied us to visit their patients.

1. The first place we were taken to was the suburb called the Nungate, on east side of the river Tyne. The case was that of a woman of the town, a confirmed drunkard. She had been attacked, we were informed, with symptoms of Cholera, during the night of the 28th-29th. When first seen at half-past 8 o'clock, a. m. of the 28th, she had no pulse; countenance sunk; skin cold and livid; cramps in lower extremities. Tongue white; much thirst; vomiting and purging of fluid having the appearance of meal and water. These symptoms disappeared under the use of stimulants. When we saw her (noon 30th), pulse 96, and weak; skin about natural temperature. She was *blind*, and was apparently suffering under the influence of narcotics. The blindness had just been discovered.

2. The next case we saw was that of a cabinet-maker, living in a clean and comfortable house in Haddington, on the west side of the river, opposite to the residence of the above-mentioned case, and about 100 yards in a direct line from her house, though, by the bridge, the distance must be a quarter of a mile. It was in this quainter of the town that the disease first broke out. This man is reported to have been attacked at 3 o'clock of the morning of the 29th. When first seen, half-past 8 o'clock a. m., countenance pale, skin below natural heat, but not cold; spasms in lower extremities, vomiting and purging of watery fluid; thirst, heat, and oppression at chest; pulse feeble and quick. Recovering under use of stimulants. No symptoms of Cholera when we saw him; no fever; had made water.

3. The next case to which we were taken was that of Wilson, a carter, a very powerful man, of a dissolute character, living in the centre of the town. He is reported to have been attacked with cramps in the extremities on the 28th, after having been engaged in sinking a well. When first seen, the cramps were severe, and he had pain at the pit of the stomach; neither vomiting nor purging; no collapse. Immediately bled to 24 ozs.; and opiates continued to be administered during the night. When seen by us, pulse high and tongue foul.

In all this we of course have seen nothing to authorize us to say that Cholera prevails at Haddington, on our own observation; but, from the reports of the medical men, who have treated the cases which have occurred, we have no he-

* "Drs. Black, Lorimer, Howden, Cruickshanks, and Burton."

sitation in saying, that these must have been cases of the pestilential disease at present prevailing at Newcastle. The case No. 1. is the only one of those we have seen, presenting the character of a patient recovering from Cholera; and we are of opinion, that, in this case, the woman is in great danger of a fatal state of congestion in the head.

Our next object was to examine the evidence on the question of the source of the disease.

We found that three cobblers had left Newcastle in search of work on the 14th instant, travelled on foot, and arrived in Haddington on the 19th. They had not fled from Newcastle to escape from the Cholera, but to escape starvation. For though they had heard a good deal about it, no cases had occurred near to where they lived; *they had never seen any one ill of the disease, and none of their acquaintance had suffered from it so far as they knew.* This was the statement of one of them whom we examined, and we were informed similar statements had been made by the others. *The first case, that of William Craig, occurred on the 18th, the day before these men reached Haddington. They had formerly been acquainted with this man, but did not see him after their arrival. These men live in the neighbourhood of the parts of the town where the disease has prevailed.*

The Board at Haddington have only been able to trace communication among those attacked in one instance. Two of the women, whose cases proved fatal, live in different storeys of the same house, or *land*. And it appears, that although not intimate acquaintance, they had spoken to each other on the previous day, or on the day on which the first was attacked, and that on the day following the second was seized with the disease.

All the cases have occurred within a circle of about 100 yards in diameter (but No. 3), and in a low and filthy part of the town on the banks of the river,

GEORGE MEIKLE.
G. HAMILTON BELL.

HADDINGTON, 30th December, 1831.

After the minute detail of some cases treated at Haddington by Drs. Burton and Lorimer of Haddington, and Messrs. Meikle and Stevenson, surgeons, Mr. Stevenson remarks as follows:—

"With respect to the mode of propagation of this disease in Haddington, all attempts to prove its introduction from Newcastle and Sunderland have completely failed; the disease first appeared on the Haddington side of the town, close to the river Tyne; at this part the river is dammed up and stagnant. At Nungate, Mrs. Macgleish was attacked, and died. Pearson's wife was attacked on the Haddington side of the town, close to the river, and died: he then went with his children and niece, Margaret Thomson, and took up his residence in Dunbar's house, which is also near the river, in an ill-ventilated dirty lane. Here Pearson immediately took the disease, and died after an illness of only eight hours,—his niece was attacked while he was under treatment, and Dunbar also complained that evening, but, on more minute inquiry, it was found he had been indisposed all the day before. I see no proof whatever, therefore, of contagion in this case. The day after the death of Pearson, James Wingate was seized: his house is in the same lane, three houses removed from Dunbar's: all communication was denied. On the opposite side of the river (Nungate) the next case makes its appearance (Laurie) in a lane behind Mrs. Macgleish's house, it is positively stated by his wife that there was no communication whatever between the people of the two houses; in fact, Laurie had been ill of diarrhoea, and confined to his house for some days. This subject is still undergoing strict investigation on the spot, and it is to be hoped some light will be thrown on this obscure subject. As far as we are warranted in inferring from these few cases, the disease would seem to be more under the influence of locality than of

contagion, especially when we see people whom terror induces to shut their doors and seclude themselves, are not exempt from that dreadful malady.

In these sentiments Mr. Meikle entirely concurs.

JAMES STEVENSON,

Surgeon, Madras Establishment.

20, EAST CUMBERLAND STREET, 5th January, 1832." of 240.

Mr. Bell received from Mr. Steele the following case, which is very interesting for several reasons. It is a decided case of cholera asphyxia, in Mr. Bell's opinion; and was exceedingly well treated by Mr. Steele, from first to last. It shews the advantage of venesection, even in the stage of collapse, and that of purgation, to ward off the fever which so generally supervenes.

"ADAM'S ROW, PARISH OF NEWTON.

Jan. 6, 2 p. m.—Mrs. Ross, æt. 35. Complains of severe pains in the bowels, coming on at short intervals, with contraction of the muscles at the umbilicus;—has been vomiting a fluid, resembling in its appearance barley-water, and evacuating per anum a fluid more nearly resembling perfectly pure water, with a small quantity of mucus diffused through it;—complaints also of sickness and vertigo, with feeling of weight and burning heat at the praecordia;—severe spasms in the feet, legs, thighs, hips, and hands;—great prostration of strength; with thirst, and an urgent desire for cold water. Features sunk, livid, and death-like; eyes dim and heavy; hands and feet cold; the other parts of the body not cold, but considerably below the natural warmth. The mouth inside is warm, but the breath is cool—nearly cold—respiration unaffected. Pulse 116, very small, at the wrist scarcely perceptible. Tongue white and moist. Has voided no urine since the attack came on.

For the last eight days she has been troubled occasionally with diarrhoea, accompanied with pains in the bowels,—last night, however, on going to bed, she felt perfectly well, but was awoke at four this morning with gripping pains in the belly. She arose from bed at six, for the purpose of commencing her daily domestic labours, and felt a call to go to stool,—the evacuation was copious and natural, but rather loose. Before having time to dress, she became so sick, that she was under the necessity of immediately returning to bed;—her feet, legs, and hands now became cold, and affected with spasms;—she had another alvine evacuation about two hours after the first, which was dark-coloured and watery, and since that time has had constant sickness, with vomiting and purging of the peculiar watery fluid, as stated above,—the spasms at same time becoming more severe, and extending to the thighs and hips. She had, about an hour ago, an opium pill of a grain and a half, with a glass of whiskey, and at present feels rather easier.

I immediately removed about 14 ounces of blood from her arm, which was all that could be got away, and even that with much difficulty. The blood was thick and dark-coloured; and during its flow she became very sick, and vomited about 8 ounces of the whitish watery fluid before mentioned. Her pulse at the same time sunk, and could not be felt at the wrist. When the retching had subsided, she swallowed a pill, consisting of two grains of camphor and $\frac{1}{2}$ grain of opium, washing it down with half a glass of brandy mixed with water,—was ordered to repeat the same every half hour,—to apply a large sinapism to the belly, with bottles filled with warm water to the feet, legs and other parts of the body.

5, p. m.—She has had no evacuations per anum since last report, and has vomited but little; what has been ejected from the stomach, however, has still the same appearance, but is imbued with something of a brownish colour, probably the brandy or dissolved opium. Has taken six pills—has had severe cramps

confined to the feet, with constant sickness and thirst—feet and hands are now warm—pulse a little improved,—ordered to take one pill every hour.

9 p. m.—Three pills taken—has vomited only once since last visit, which was about two hours ago—felt a call to evacuate the bowels, but without effect—no urine—some cramps occasionally in the toes—complains much of sickness, thirst, and headachs. Lips blue—eyes sunk, and whole appearance of countenance *very cadaverous*. Pulse 116, a little stronger. Surface of body warm and clammy.

She was again bled to about nine ounces, when she became sick, as in the morning; her pulse fell, and the flow of blood stopped. Blood still thick and dark-coloured.

Pills and brandy to be continued.

Jan. 7, 10 a. m.—At one in the morning she had taken six of the camphor and opium pills as above, when they were discontinued, and one-half ounce of the mist. camphor, with five drops laudanum and a little oil of cloves given every hour. She is now improved in her appearance: has had no spasms; body of natural warmth, and covered with a clammy perspiration. Pulse 112, soft, and of natural strength. Tongue white. Has vomited none, nor has she had any alvine discharge. Took some tea and biscuit for breakfast. She is at present giving suck, but the breasts have become quite flaccid. Complains of no pain except some degree of headache, which she describes as not very severe.

Intermitt. mist. camphor.

R. Subm. hydrarg. gr. xxx.

Ext. colocynth. gr. x.

Syrup. simp. q. s. ut ft. mass. in pil. x. dividend; quarum sumat i. omni hora.

7 p. m.—Continues to improve: countenance resuming its natural appearance, but seems a little tinged. Only three of the pills taken, and no evacuation either upwards or downwards. Voided about fourteen ounces of high-coloured urine at 11 a. m., and again a smaller quantity in the afternoon. Had beef-tea for dinner, and tea and biscuit in the evening.

Jan. 8, 10 a. m.—All the pills taken. Has been vomiting and purging copiously since six this morning. The fluid ejected from the stomach is tenacious, and of a dark yellowish-brown colour; that per anum is stated to have been 'black and green,' and in smell highly offensive. She complains of pains in the epigastric and umbilical regions. Countenance anxious and clammy; eyes heavy; conjunctiva of a yellowish tinge. Skin of natural warmth, dry; pulse 132, thready; tongue brown and moist; voids urine occasionally. States that on the afternoon of yesterday her milk was abundant, but that to-day it flows less freely.

8 p. m.—Has had several very dark bilious evacuations from the bowels; and twice since the morning visit, an attack of retching with the discharge of a little frothy mucus. Urine flows freely; breasts flaccid; pulse 138, thready; tongue whitish; moist. Thirst urgent. Complains of considerable pain in the epigastric and lower part of the right hypochondriac regions, where may be felt a diffused hardness, tender to the touch. She also feels it uneasy when she moves her body, and lies easiest on the left side. Appearance of countenance as in the morning. Head uneasy, but not pained. Has had hiccup twice during the afternoon, and had an attack of it at the time of visit.

Jan. 9, 10 a. m.—Countenance resuming its natural appearance and expression. Complains principally of weakness, thirst, and the abdominal tenderness: no appetite for food. Pulse 128, soft. Tongue whitish. Slept occasionally during the night. No vomiting. Two dark-coloured alvine evacuations. Bilious, but not feculent. Urine voided in much the same quantity as when in health, and of same appearance. Has no milk in the right breast.

8 p. m.—Was cupped this afternoon over the pained part of the belly, but with little success; not more than two ounces of blood having been got away;

pain still continues ; pulse 112 ; soft and weak ; no alvine evacuation ; other symptoms as in the morning.

Applicet. Emp. Lyttae parti dolenti abdom.

Extract of letter enclosing above case.

Craighall, 10th January, 1832.

' In reference to the above case, I may mention, that contagion seems to have had nothing to do in its origin. The residence of the patient is at least 12 miles from Haddington, with which place I have not been able to ascertain that communication of any kind had occurred. The woman is the wife of a collier ; has had eight children ; is cleanly in person ; of temperate habits ; of healthy constitution ; and in so far as propriety of conduct in every respect can constitute a ground of exemption from the disease, in so far was she entitled to consider herself safe. She has had an attack of ordinary Cholera of this country every autumn for some years past.

' It is perhaps not unworthy of remark, that upon bleeding her, the blood which flowed readily at the first, became languid in its current as the flow went on, and at last stopped altogether. That she became deadly sick and vomited, and the pulse died away ; in this particular, differing, so far as I have read, from most other cases of Cholera, when the pulse is said to rise with bleeding.

(Signed) GEO. STEELE, Surgeon.'

I may observe on this point, that it was found in India, that, unless the flow of blood from the vein became more free, and its colour improved, the symptoms described by Mr. Steele very frequently followed. And there can be little doubt, had he been able to remove blood to this extent from Mrs. Ross, the first bleeding would have sufficed, and little else would have been necessary to remove the collapse. Compare this with case in text, p. 159.

Mr. Steele informs me, under date 13th January, 1832, that the blister effectually relieved the pain and symptoms of hepatic congestion. ' She is now (he adds) nearly well, debility being her only complaint.' " 244.

With the foregoing extracts we shall take leave of Mr. Bell, requesting our readers to peruse, with great attention, his fourth section, printed in our Extra-Limites. Sober Reason is beginning to assert her sway, and we have neither doubt nor fear that truth will be established on a firm basis before the present epidemic has left our shores. The profession and the public generally are under the deepest obligations to Mr. Bell, who maintains the talent attached to his name and to his family—for we find that he is the nephew of the late John, and the present Sir Charles Bell.

IX.

CHOLERA PAMPHLETS.

I. LETTERS ON CHOLERA. By Whitelaw Ainslie, M.D.

THE author of these Letters, so long and so favourably known to the public by his writings, appears to have been spending his time, *in otio cum dignitate*, in the country, after a long and active life in tropical climes, when the

advent of an old enemy roused him from his quietude, and induced him to come forward once more on the public stage, with the hope of contributing his mite to that professional purse, which is not very full of information respecting the subject of Dr. A.'s inquiries. However unsuccessful, no one can say that the attempt is not laudable. Dr. A. does not step forward with a nostrum, a puff, a disinfecting agent, or an air-bath, for the purpose of filling his own purse. He can have no sinister or selfish object in view. Whatever may be the result, he is sure to be the loser; for, fortunately or unfortunately, books on cholera do not now pay the expence of the rough and coarse paper employed in working off the proof-sheets!

Our readers are aware that Dr. A. published a pamphlet, some time ago, broaching the doctrine, that an acid in the *prima via* was the chief cause of the phenomena in cholera morbus, and proposing magnesia as a remedy. It was probably during the time Dr. A.'s work was passing through the press, that the discovery was made, by Drs. Clanny and O'Shaughnessy, that the contents of the stomach and bowels were alkaline in cholera, and, consequently, the proposed remedy useless! *Commenta delet dies opinionum.* We do not, indeed, attach much importance to the chemical discoveries, respecting either the blood or the secretions, in cholera. The changes induced in these fluids are secondary and very subordinate considerations. We know that, in dysentery, a large quantity of mucus is formed in, and daily discharged from, the bowels. Who would think that any medicine, acting on this mucus, would be of any avail in dysentery? Or can we cure dyspepsia, by neutralizing the acid perpetually generated in the first passages?

Dr. A. is of opinion, that the cholera of the present day is not a nova pestis. The Chinese have been acquainted with it for ages; and so have the Hindoos, who, in their *sastrums*, term it *SWETA-RASA*, or white fluid, from the appearance of the discharges. Dr. A. saw the disease, in 1815, with all the symptoms which it now presents, and, consequently, before its supposed origin, in JESSORE.

"This is no place (says Dr. A.) to enter at large upon the causes of epidemics. These have puzzled the wise ones of all nations, from the period when men first began to reason, and differ on such points; and differ they will continue to do, till our *pneumatic* chemistry has made greater advances than it has yet done. The peculiar nature of the morbid miasma giving birth to distempers, must of course be essentially different, corresponding with each distinct disease engendered; whether *bred* and *brewed*, to speak figuratively, on the noisome face of a dark morass,—within the confines and narrow lanes of a large, crowded, ill-supplied, and ill-ventilated city—on the ensanguined plain, amidst thousands of unburied dead—or in the obscurity and damp of some vast wood, where animals breathe and plants grow, which never felt the purifying influence of the sun's rays—or within the confines of the prison-house, where sorrow and remorse render still more deleterious the vapours of the dungeon," 5.

When president of a medical committee, appointed to enquire into the epidemic fever, which devastated India in 1809-10 and 11, Dr. A. spared no pains to investigate its causes; but in vain. He is disposed to attribute that and the present epidemic to some peculiarity in the electric fluid, not yet ascertained. A good many are now inclined to the same opinion. With respect to the question of contagion, Dr. A. is more inclined to the con than the pro; but is not decided either way.

II. CHOLERA, ITS CHARACTER, TREATMENT, IDENTITY, &c. By Dr. Thackrah, of Leeds.

This gentleman is already favourably known to the profession by his writings, and especially by his *Essay on the Blood*. It appears that Dr. Thackrah, like several other zealous members of the profession, left his home and private practice, in order to observe, on the spot, the nature, propagation, and treatment of cholera morbus. The present pamphlet contains the result of his observation. We shall, doubtless, have many other productions of the same kind, from those who were spectators of the epidemic on its first visitation to our shores. Dr. T. divides cholera into three forms—the mild autumnal bilious flux—the congestive or purple cholera—and the cholera with marked defect of the secretions.

Among other preliminary or premonitory symptoms, Dr. T. remarked diarrhoea. We have often suspected the truth of that general remark, that the sensorial functions remain unaffected till the last in cholera. Dr. T. admits that this is sometimes the case, but by no means generally so.

"The integrity of the mental faculties has been stated as a peculiar symptom. Indeed, it is sometimes very remarkable. The mind seems to sit unimpaired and serene, amidst the ruins of organic life. But the phenomenon is by no means universal, nor even, I think, general. Consciousness, as far as I have observed, is generally reduced; there is occasionally the pettishness of a child half wakened, stupor, sometimes difficulty of comprehension, and sometimes even coma." 5.

Vomiting and purging are often absent in the worst cases, though the diarrhoea may have preceded the severe attack. Sometimes the patient craves for food and drink. The ejected matters are, at first, the contents of the stomach, often tinged with green bile—afterwards, the pale fluids characteristic of cholera.

"Modified by constitution and circumstances, cholera presents great diversities of character and combination. In the present epidemic we may readily find every variety, from the mildest diarrhoea, or bilious flux, to the purple disease. Such is the case now at Newcastle and Gateshead. The attacks at first were chiefly of the most severe kind; but the disorder at present is comparatively mild, and of a character familiar to English practitioners. On its invading a place, epidemic cholera is generally violent and destructive; but, in a short period, it seems to sink into ordinary disease;—to revive, however, with all its malignity, at the next town or district.

Dr. Dunn informed us, and the remark has been made by others, that in India, when a patient recovered from the direct effect of cholera, no danger was apprehended, and he regularly advanced to health, but that at Sunderland he saw a new and alarming train of symptoms frequently supervene and destroy in a few days. These were witnessed on the continent of Europe, and are fully described in the reports of *Drs. Russell and Barry*. They constitute the CONSECUTIVE FEVER. A patient rallying from the congestive stage of cholera is found to have the skin hotter than natural, the pulse hard and wiry, the tongue furred, drier than before, and red at the edges, and to complain of headache. The urine is high-coloured; there is tenderness on pressure of the abdomen; soon the tongue becomes quite brown, and dry: the head is more affected; in a word, a form of typhus destroys the patient in a few days. We visited the cholera hospital at Sunderland when the inmates were said to exhibit chiefly the consecutive fever; but to our observation they seemed to labour generally under mild

congestion, rather than typhus. The pulse was rarely above 100; the skin was not hot and parched, nor the tongue dry or brown." 7.

The consecutive fever he conceives to depend on gastro-enterite or cerebralitis.

" Of the primordial germ of cholera we know nothing, and of the mode of its propagation, little. Much has been written on the spread of the disease. The medical press teems with disputes on the contagious or non-contagious—on the infectious or non-infectious—on the communicable or incommunicable character of the malady. But have the disputants accurately examined the atmosphere by which, or through which, the disease is propagated? The chemists find little difference between the pure air of the mountains, and that of confined apartments fouled by the respiration of a crowd; and on marsh miasms or malaria, little light has yet been thrown. Till this subject be developed, nothing fully satisfactory can be established, on the subject of infection, the character of epidemics, or the spread of epidemics. We may infer, however, from the information hitherto adduced, that peculiar states of the atmosphere, connected with its electricity, or with terrestrial exhalations, produce a disease, which, in proportion to the number of patients, and the unfavourable circumstances in which these patients are placed, becomes aggravated in character, assumes an infectious nature, and is communicated from person to person. This communication, however, is not uniform. Some states of atmosphere promote it, some resist it. Neither does the disease attack persons indifferently. A great proportion of every population is invulnerable; cholera strikes down the predisposed; and when these have been attacked, the disease disappears, for a time at least, in the town or district." 24.

Dr. Thackrah describes an epidemic cholera which prevailed in the town and neighbourhood of Leeds, in the year 1825. It was preceded by an unusually wet Spring, with easterly winds, while the Summer was remarkably hot and sultry. The cholera of August, September, and October, presented almost all the symptoms of the present epidemic. It was more generally diffused, but not so fatal. In Leeds, 43 per cent. of the inhabitants were affected by the cholera. At Moor Allerton, the ratio of mortality was about 4 per cent. of the sick. The following passage may inspire the faint-hearted cockney with hope.

" 1st. Cholera was much more prevalent in the country than in the town. The atmosphere, the great agent, of course, in all epidemics, pure in the country, and fully subject to all the changes of season, is much more artificial in large and populous towns. Smoke, animal effluvia, and probably also diversities in the electrical state of the air, greatly diminish its susceptibility to those changes, morbid as well as healthy, which nature effects in successive years. Thus, while the impurity of atmosphere generally prevents townsmen enjoying robust and buoyant health, it also shields them from the violence of epidemics. Typhus frequently affords an illustration. Prevalent and fatal in the fine and elevated village of Rawden, marked neither by poverty nor filth, it is rarely severe in the sheltered town of Leeds, which of course abounds with the usual fomites of disease.

2nd. Lofty situations, and those especially which are almost destitute of wood, were more subject to cholera, than plains and vallies.

3rd. Cholera seized chiefly the poor and debilitated. In several pauper families at Moor Allerton, we found that every individual had suffered, more or less, from the epidemic, and that the three who died in the district examined were debilitated females, destitute of the comforts, and almost of the necessities of life: while the fatal case we attended, not far distant, was a man oppressed with a

large family, ill fed, and hard worked. The comparative exemption of the upper classes of society, I have often observed in my own practice in the town ; and in the country this fact is more remarkably exemplified. At Moor Allerton, in the district examined, there are six residences of merchants and gentlemen, containing 50 individuals, and of those only one had cholera—2 per cent. As a contrast, we found in six of the poor houses, containing 39 inhabitants, 21 had been affected with the disease—53 per cent. A similar observation was made at Kirkstall. The power, in fact, of most agents of disease is diminished in the inverse proportion to the animal vigour of the individuals exposed.

These observations, written in 1825, seem to refer cholera to atmospheric influence, independent of infection or contagion. But a note, made at the same time, shews that there was also another mode of propagation suspected. ‘Several observations lead me to suppose that cholera is sometimes infectious. I do not assert the fact, but I have observed as many circumstances concur to favour this opinion in reference to cholera, as in fever—at least in the cases I have seen in this neighbourhood for the last nine years.’ *A recent examination of the details of the epidemic produces the conviction that, although it originated in a wide-spread constitution of atmosphere, it was capable, in certain circumstances, of being communicated from person to person.*’ 30.

From the latter part of the foregoing extract, it is evident that Dr. Thackrah is a contingent contagionist. Our intelligent author dedicates a section to the identity of English and Indian cholera.” He observes that the “bulk of the profession, and the principal writers on the disease, have supposed a wide difference between the epidemic cholera of India and our own.” But from the perusal of written descriptions, and from personal comparison of what he saw in his own practice formerly, and now at Newcastle, he comes to a very different conclusion. Dr. T. details ten cases of the Leeds’ epidemic, of 1825, and no one can peruse these cases, without acknowledging that it is impossible to separate them from what is called the Asiatic cholera, as far as the phenomena of the disease can be taken as criteria. We are tempted to quote two or three cases.

“ In August, 1824, a strong man was attacked with vomiting and purging. The evacuations were quite devoid of bile. The cramps exceeded in violence any thing I had before seen. Such were their convulsive character, that he was once thrown out of bed, and three men were afterwards required to hold him. The agony made him cry out with vehemence. This patient also recovered.

In September, 1825, a debilitated and ailing female, attended by Mr. Corsellis, was seized at 3, a.m. with vomiting and purging. Most distressing cramps speedily ensued ; the surface became cold ; the countenance sunk, and, to use the phrase of a woman who attended her, *was ‘ all blue as violet.’ The stools were colourless.* She could not retain them. She died about eight in the evening, 17 hours from the commencement of the urgent symptoms. On laying out the body, the women particularly remarked its blue, black, mottled appearance. *One leg remained flexed by spasm, its foot resting on the shin of the other.*

An elderly woman, who attended the funeral of the preceding, was attacked a week after. After shearing corn all day, she went to bed well at night, but at eight a.m. was seized with vomiting and purging, frequent and profuse. The countenance was much shrunk ; the eyes sunk, and surrounded with a blue circle ; the whole surface cold, and extremities quite pale. The evacuations were not seen by her medical attendant, but they were said to be yellow and offensive. She had no cramps ; she lay indifferent to external objects, and constantly dozing. Some reaction took place next day ; but on the third morning she became worse, continually complained of cold, and sunk at night.

These two females lived in a hamlet, the houses of which are as close to each other as those of a town. After these deaths, cholera spread among the inhabitants, and left not a house unattacked.

My excellent friend, and quondam pupil, Dr. Whitehead, of Beverley, has referred to me a case which occurred while he was with me, in the year 1825, and of which I regret that I cannot find any details recorded. A man was attacked with violent symptoms of cholera, at two o'clock in the morning, and sunk at ten—eight hours, consequently, from the invasion of the disease. On post-mortem examination, our principal remark was the large quantity of *albuminous matter* in the small intestines. The stomach was greatly contracted.

In September, 1825, a labouring man, 63 years of age, was affected with diarrhoea for a few days, but so mild as not to interfere with his usual avocations. In the night, he was seized with vomiting, and when seen three hours after the attack, by Mr. Scholefield, then my assistant, he had the facies Hippocratica, extremities cold, and radial artery without pulsation. He died in two or three hours." 36.

We ask the advocates of *imported cholera* to read the foregoing cases without prejudice. But the appeal is vain. They cannot see any thing but through the yellow medium of quarantine creeds!

"The cases which I have adduced are not offered as fair samples of English epidemics. They are rare; while milder forms of the disease are abundant. They show not what English cholera generally is, but what it can be—the appalling form which it sometimes presents. This aggravated character, we can only, in the present state of our knowledge, ascribe to peculiar and obscure modifications of atmosphere, to predisposition, or circumstance. In what does it differ from the Malignant Cholera, the Spasmodic Cholera of India? I believe in none. I do not, of course, mean to assert that the cases to which I refer, are accordant in every particular either with those in India, or with each other. No two cases can in any country, or of any disease, be expected to have precisely the same symptoms. But I contend that the signs which are considered to characterize the Indian Cholera are found in a marked and decided degree in the cases just stated. Thus we have the peculiar character of the evacuations—the sudden and great prostration of strength—the extraordinary reduction of pulse—the shrunk and purple countenance—the loss of voice—the purple, or pale, contracted state of the extremities—and death sometimes in a few hours. I conceive, therefore, that no fair reasoner can refuse to admit the identity of the disease. A physician sent down by Government to ascertain the character of the Cholera in the north of England, has repeatedly declared that he could distinguish the Indian from the English *only by the prevalence* of the former—the number, not nature, of the cases giving the distinctive character of the Indian! Cholera in England has certainly not produced as great a mortality as Cholera in India. Neither has inflammation of the liver; yet no one considers Indian Hepatitis as distinct, in nature, from English. The character of the people, their habits and food, climate, and other circumstances, have produced a mortality from both diseases which seems enormous to the English practitioner. Could an Indian army, however, with its train of followers—enfeebled, debauched, and fatigued, deficient in protection from the weather, deficient, especially, in nourishing food—have been encamped in England in 1825, we should have beheld, I conceive, the most appalling form of the disease. The concentration of individual cases in bad circumstances, would have produced a poison as communicable from person to person, and as fatal as the present dreaded epidemic. Had the English and Indian Cholera been attentively compared, medical boards would not have been perplexed in their attempts to declare the symptoms which distinguish the one from the other, nor have considered an absence of bile the peculiar and distinguishing character of the Indian malady. But men, not fami-

liar with the epidemics of former years, have determined the character of the present. The Indian practitioner has been sent to decide between two diseases, when he was intimately acquainted with but one. Had the identity of character in the epidemics been ascertained by the medical men, who have given opposite names to the disease in particular places, official papers would have been more satisfactory and accordant; the distressing doubt of the public would have been prevented; and more attention would have been paid to the important and practical parts of the subject." 40.

The treatment of cholera need not detain us long. Dr. T. considers venesection as particularly indicated—first, as reducing the turgescence of the internal vessels—secondly, as rendering the blood more fluid, by promoting absorption from the serous cavities—thirdly, as reducing spasm—fourthly, as promoting the natural secretions. Dr. T. has witnessed decided benefit from this practice in Sunderland during the present epidemic, and also in his own practice, during the Leeds epidemic of 1825. He has also observed the most beneficial effects from scrupulous doses of calomel. On the other remedies we need not dwell. We have been much pleased with the candour, good sense, and professional talent displayed in this pamphlet.

X.

THE CYCLOPÆDIA OF PRACTICAL MEDICINE. Edited by Drs. *Forbes, Tweedie, and Conolly.* Published in Monthly Parts, price Five Shillings. Part I. ABDOMEN—AORTA. Part II. AORTA—AUSCULTATION. January and February, 1832.

It was high time that a Dictionary of Medicine should accompany a Dictionary of Surgery in this country. The success which crowned the latter work, though edited by an individual, might have reasonably prompted to a similar undertaking, in the wider field of physic; and Dr. Good, indeed, may be said to have made the attempt, though on a different plan, and with indifferent success. The LONDON MEDICAL DICTIONARY by Dr. Parr, of Exeter, was and is still, a very valuable performance, though greatly underrated and neglected in these times. It was evidently the Dictionnaire des Sciences Médicales that held forth the example, and furnished the model for the Cyclopædia now commenced in this country, and which promises to be of great importance to the profession. The editors may reap considerable advantages from the labours of their predecessors, Continental and British. They are cautioned by the bad example of the great French work, to avoid the introduction of unnecessary and extraneous articles, which increase the size but impair the strength of the performance—and they are warned by the Dictionary of Dr. Hooper, to aim at something more than a mere explanation of technical terms.* Every work, however, of the nature

* By the way, the explanation of technical terms might have been introduced, as they would have taken up very little space, and would thus save the necessity for a Medical Dictionary in addition to the Cyclopædia.

of this Cyclopædia, has certain attendant dangers, not easily avoided. Each article is, in fact, the *dissertation* of an individual on that particular subject—and therefore the public runs the risk of having the peculiar views or sentiments of the *individual*, instead of a judicious compendium of the actual knowledge which has been acquired by the whole profession. Here is the difficulty—here is the danger. Originality is more attractive for the first perusal; but it is not so permanently useful for subsequent reference as judicious compilation. This is the key to the great success of COOPER'S SURGICAL DICTIONARY—and if we look to antiquity, the same applies to the compilation of Celsus, in which the compiler hardly ever appears in his own person. These hints, we have no doubt, will be taken in good part, both by the principal editors and the collaborateurs, for we can assure them that we wish them success in their laudable and arduous undertaking.*

The first fasciculus, containing 112 pages of double columns, royal octavo, includes A B to A O, so that, if the work goes on in proportion, it will be of considerable, though we think not sufficient extent. We conceive that it should be on a large scale, so as to form a kind of library for the wide circle of practitioners, who cannot afford time or money for those works from which a Cyclopædia is derived. Dr. Forbes leads the van, in an able article on—

EXPLORATION OF THE ABDOMEN.

Nothing can be more true than that medical men are, generally speaking, much too negligent in examining the external surface of the body while inquiring into internal diseases. This remark applies to the abdomen as well as to the thorax, where some diseases are strikingly expressed on the surface by change of configuration or alteration of natural movement. Thus, in chronic pleurisy, a single glance at the naked chest will shew immobility of one side, whether enlarged or contracted. In the abdomen, from the yielding parietes, the viscera are more easily examined, and enlargements or displacements detected.

Dr. Forbes has introduced three plates exhibiting regional plans of the trunk of the body, executed by Mr. Paxton of Oxford. We confess that we do not see their utility in a work of this kind. Under the heads of Inspection, Palpitation, Percussion, &c. of the Abdomen, Dr. F. makes many judicious observations, and offers some useful rules for the guidance of the young practitioner. Upon the whole, we suspect that "abdominal exploration" is somewhat too lengthy, as compared with other articles, and especially with the very next one to it—ABORTION. This last, from the talented pen of Dr. Robert Lee, occupies five columns, whereas the exploration, above-mentioned, claims NINETEEN. We shall introduce an interesting extract from Dr. Lee's article. After advertizing to various general or constitutional causes of abortion, Dr. L. goes on to say—

"But by far the most frequent cause of abortion is in the product of con-

* We have reason to know that the views above-mentioned have been strongly enforced by the editors upon the attention of the collaborateurs, and we have no doubt that the result will be beneficial.—*Ed.*

ception itself; viz. in a diseased condition of the foetus, or its involucra, by which it is deprived of life, and afterwards expelled from the uterus like a foreign body. The blighted ovum is thrown off from the parent, as fruit which has become withered is separated from the branch of the tree on which it has been produced. We have examined numerous ova which have been prematurely expelled, and in many of these, where no disease was obvious at first, some morbid state of the membranes, placenta, or embryo itself, has been detected, sufficient to account for the accident, wholly independent of any constitutional or local affection of the mother. Sometimes the chorion has been thickened, opaque, and extremely irregular, or lobulated, on its internal surface. The amnion, in some cases, has undergone similar changes, so that the healthy appearance of the involucra has been entirely lost. A collection of serum, or blood, has not unfrequently, also, taken place, between the chorion and amnion. The placenta, in some cases of abortion after the third month, has been hard, like cartilage, small and imperfectly formed, with calcareous particles deposited in its substance: in others, the placenta has been unusually large, and its vascular structure has been changed into a soft yellow fatty substance; or hydatids have been developed in its tissue. The umbilical cord, in these instances, has been remarkably slender, and the foetus has appeared to perish for want of a proper supply of nourishment; and not from any defect in the organization of its internal parts.

The brain of the foetus, or the thoracic or abdominal viscera, may all undergo various alterations of structure incompatible with life; and where the life of the foetus is extinct, it becomes an extraneous body; expulsive efforts on the part of the uterus are usually soon set up, and abortion ensues as the necessary consequence. When the ovum is healthy, it adheres to the uterus with great force; but when diseased, the slightest shock to the mother, the most trifling mental affection, is sufficient to cause it to be expelled. Women have had the bones of the extremities fractured during pregnancy, and have suffered other grievous injuries, without miscarrying. A woman mentioned by Mauriceau escaped by a window from the third floor of her house when on fire, and in her fall to the ground fractured her arm, yet abortion did not follow. The case of a young woman with a narrow pelvis is related by Madame Lachapelle, who threw herself into a deep pit, and suffered injuries of which she subsequently died, yet the foetus was not expelled.

All cases of abortion cannot, however, be referred to organic disease of the uterine organs, or of the embryo and its involucra; since it cannot be doubted that the process often arises from accidental detachment of the placenta, in consequence of an unusual determination of blood to the vessels of the uterus, or contraction of its parietes. The placenta adheres to the uterus by means of the deciduous membrane alone, which is directly applied to the openings of the uterine sinuses. If the impetus of the blood in these be increased by an excited state of the general circulation, or by irritation of the uterus itself, an unusual afflux of blood to these vessels will take place, and the placenta will be forced from its connexion with the uterus, more or less extensively, by the extravasation of blood from the openings of the uterine sinuses, between the placenta and uterus. If this takes place to a considerable extent, the process of gestation will be arrested, and in a longer or shorter period the ovum will be expelled. In plethoric women, or in those who menstruate copiously, very slight causes may give rise to a hemorrhagic effort in the uterine vessels, and to the extravasation of blood between the uterus and placenta, with the other consequences now described. A plethoric state of the uterine organs is most frequently met with in those who lead luxurious lives, who sleep in warm soft beds, and indulge to excess in animal enjoyments. This plethoric state of the uterus commonly gives rise to a sense of weight in the hypogastric region, or irregular pains of the uterus; but it sometimes happens that the blood suddenly bursts from the

uterine vessels, and detaches the placenta, where there has existed no previous sign of unusual determination of blood to the parts.

Besides these causes, there are others which excite undue determination of blood to the uterine organs, as violent exercise, dancing, the use of the warm bath, the employment of acrid cathartics and emetics, spontaneous diarrhoea, the irritation of hemorrhoids, injurious pressure of the hypogastrium, and violent passions of the mind. Opening the membranes of the ovum and evacuating the liquor amnii certainly gives rise to premature expulsion of the contents of the gravid uterus." 11.

The symptoms which precede and accompany abortion are succinctly but clearly propounded, and the treatment is then explained.

" In premature expulsion of the ovum from organic disease of the uterine organs, or from alterations of structure in the embryo or its involucra, any plan of treatment is not only inefficacious, but even injurious, where the contractions of the uterus have been excited to throw off its morbid contents. Where the symptoms of abortion come on without any apparent cause, we have reason to fear that they arise from this state of the uterus or its contents. The treatment must be directed to the following points: first, to procure a complete separation of the ovum; secondly, to moderate the hemorrhage and pain which may accompany it.

By removing plethora, where there is general fulness and excitement, by venesection, and by calming the violence of the uterine contractions by sedatives, we shall often prevent a protracted discharge of blood; and by obtaining relaxation of the os and cervix uteri, favour the complete escape of the ovum. Where there are no signs of local or general plethora and excitement, blood-letting is contra-indicated.

In threatened abortion from congestion of blood, or unusual determination of this fluid to the uterus, with slight detachment of the placenta, and irregular uterine contractions, it is possible in some cases, by the prompt application of remedies, to arrest the mischief. The greatest mental tranquillity, and absolute rest in the horizontal posture, on a mattress or couch, with the body lightly covered, should be enjoined in all cases of threatened abortion of this description. If the patient is plethoric, and the pulse accelerated, blood is immediately to be detracted, in quantity proportioned to the urgency of the symptoms. Twelve or sixteen ounces should be taken from the arm, and, if necessary, the same quantity should again be taken after a time. Cold applications, and even ice, if it can be procured, should be applied over the pubis. A dose of laudanum, or liquor opii sedativus, is to be given, or a starch and laudanum clyster may be administered, to prevent or quiet the uterine contractions. The super-acetate of lead is in these cases a valuable remedy. Two grains, combined with a quarter of a grain of opium, may be taken every three hours until the discharge of blood begins to abate.

As to the subsequent effect of abortion, it may be stated as a general fact, that, in a very large proportion of cases, it produces little or no injurious effect on the constitution of the mother. It is an accident of very frequent occurrence in all countries, and has often occurred without leaving any permanent injury. Where the process of expulsion has been protracted, and much blood has drained from the uterine vessels, a proportional injurious effect has been the consequence on the general health of the mother.

From what has now been stated respecting the causes and treatment of abortion, little requires to be said as to the management of women who are habitually liable to this accident. We are in possession of no means which can either prevent or remove the numerous organic diseases of the uterine organs, and of the embryo and its involucra. Much, however, may be done to avert the danger where it arises from plethora and irritation of the uterus alone, by obviating

general fulness, and taking off the susceptibility to premature contraction of the uterine fibres, by rest, mild diet, and the occasional use of anodynes. Where there is much constitutional debility present, we must adopt all the means we possess for relieving the weakness, and more particularly the cold bath, and proper diet and exercise. Warm rooms and late hours are to be avoided." 13.

These extracts will shew that the article *Abortion*, though small in size, is pregnant with information.

INTERNAL ABSCESS is well handled by Dr. Tweedie, one of the Editors. It occupies 14 columns, and is very creditable to that practical and industrious physician. It is quite insusceptible of analysis. We shall quote a single passage as a specimen.

" **ABSCESS OF THE LUNG** is a lesion very rarely met with, though from the frequent mention made of this pathological phenomenon by British as well as by some continental writers, we should be led to imagine it was a common termination of pulmonary inflammation. The opinion of Laennec on this point is very strongly expressed. It appears from his statement, that there is no organic lesion more rare than a collection of pus in the substance of the lung : and that, among several hundred dissections of persons who died of peripneumony, he had only met with a collection of pus in five or six instances, and in these the purulent deposits were neither extensive nor numerous in the same lung. In three cases only was the collection of pus of considerable extent, but in these there was no circumscribed cyst, the wall being formed by the pulmonary tissue which was much softened and disorganized. Laennec also states that he had been able to find only two similar cases on record, neither of which had the proper cyst of phlegmonous abscess.

Andral mentions the case of a new-born infant, whose lung contained several large abscesses. They had no resemblance whatever to tubercular excavation. (Vol. ii. p. 539, *Translation.*)

The kind of suppuration to which the substance of the lung is occasionally liable is purulent infiltration. When it occurs it is accompanied with hepatization, and appears to succeed to the most intense degree of inflammation. The consistence of the lung is at the same time much diminished, being so soft as to break down when handled. The pus appears in small detached points, so that when the lung is incised or squeezed, opaque yellow matter flows out. It may occupy an entire lobe, or only a small portion of it, and sometimes succeeds to pneumonia with great rapidity. Andral asserts that it has been found fully formed four days after the first symptoms of pneumonia had made their appearance.

The pulmonary parenchyma when infiltrated with pus presents a greyish ash colour, and, as the second stage of pneumonia has received the name of *red hepatization*, the former condition has been distinguished by the term *grey hepatization*. When the lung, in this state, is pressed, the purulent fluid exudes in greater or less quantity, and when it is squeezed out, the lung frequently reassumes the red colour and hepatized appearance of the second stage ; thus proving, as Andral states, that the *grey hepatization* differs only from the *red* in having its structure infiltrated with pus.

The process of softening of tubercles presents another variety of purulent formation in the substance of the lung. These bodies, which vary in size, are in their first stage semi-transparent, and of a greyish colour ; in some cases almost colourless and transparent. In this state they are productive of little inconvenience ; and hence individuals, with pulmonary tubercles, often enjoy uninterrupted health for years. Sometimes a single tubercle has been found, but more generally they are numerous, and situated in the upper part of the lung. In some cases they are superficial, in others deep-seated. The tendency of these

bodies is to soften, and to form a cavity in the portion of the lung where they are situated. The softening generally commences in the centre, and gradually increases towards the circumference, until the whole tubercle is converted into a fluid mass. One or more of the bronchial tubes become perforated, through which the tubercular matter is evacuated. A tubercular cavity is thus left, the interior of which is traversed by bands of pulmonary tissue, covered by tubercular matter, and the smaller branches of blood-vessels, which are generally obliterated and transformed into impermeable cords. In some instances, however, these vessels continue open, and, by their erosion or rupture, occasion haemoptysis. The larger blood-vessels are pressed towards the side of the excavation, lining, as it were, its internal surface. The bronchial ramifications undergo similar pressure; but, according to Laennec, they appear to be rather enveloped than pressed aside by the tubercular matter, the pressure apparently soon obliterating their canal, as they are scarcely ever to be detected in the morbid structure of the lung. He moreover thinks they must have originally traversed the portion of lung occupied by the tubercles, as, in even the smallest excavation, one or more bronchial tubes are found opening into it. These tubes appear not to open sideways, but are cut directly across on a line with the internal surface of the excavation, while, from their direction, it is evident that they originally crossed the excavation. The boundary of these tubercular cavities is formed by the parenchymatous tissue of the lung, which has become more or less indurated or infiltrated with tubercular matter. The internal surface is lined by a false membrane, which is composed of concrete pus, and is so soft as to be easily detached by the scalpel.

These cavities vary in number and size; sometimes there is only one cavity, in others there are several, which either remain isolated, or communicate together by fistulous openings, varying in extent from such as will scarcely contain a filbert, to those which occupy a considerable portion of one lung.

With regard to the possibility of the cicatrization, or healing of tubercular excavations, it would appear, from the minute and distinct researches of Laennec, that this process does take place, though in a very small proportion of cases." 17.

Dr. Marshall Hall has given a short but interesting article on ABSTINENCE, which he treats of under three heads—its curative effects—its morbid effects, when employed as a remedy—and its morbid effects in famine, &c.

We shall make room for an extract from this article.

"Abstinence is also a very valuable remedy in many of the more chronic forms of disease; a state of extreme inanition of the stomach not only enfeebles the circulation, but acts most powerfully upon the absorbent system. With this view it has been proposed to institute a system of rigid abstinence in cancer: it might probably be more successful in some kinds of dropsy.

An obvious application of abstinence, as a remedy, is that made in cases of disorder or disease of the stomach itself. These affections are so constantly the effects of improper food, that, to change the diet is obviously but to remove the most usual cause. To withdraw food nearly altogether for a time would, doubtless, be to employ an actual and powerful remedy. This is so evident, and yet the facts in illustration are so few in number, that we cannot but recommend the subject for future inquiry. If a joint be morbidly affected, we enjoin the most absolute repose. The value of a well-regulated but rigorous abstinence in cases of disorder or disease of the stomach itself, and of some of the chylopoietic viscera, especially the liver, would, doubtless, be equally great. This subject has been well touched upon by Dr. J. Johnson; and the writer of this article can add his testimony to the beneficial effects of abstinence in the cure of these diseases.

It is impossible to refer to the subject of the use of abstinence as a remedy in

disorders or diseases of the stomach, without recalling to our minds the services which M. Broussais has rendered to this department of medicine: the *dîète absolue*, or extreme abstinence, recommended in gastritis by that author, is, assuredly, a far more natural and appropriate remedy, than the mistaken administration of drastic purges, too much employed in this country.

The next object in enjoining abstinence, is to reduce the mass of solids and of fluids. Abstinence is, therefore, the most direct remedy for plethora. This point has been ably treated of by Dr. Barlow, of Bath, in his Treatise on the Bath Waters. See the Article ANTI-PHLOGISTIC REGIMENT.

The case which next presses itself upon our notice, in regard to abstinence as a remedy, is that of disease, or tendency to disease, within the head. The immediate threatening of apoplexy must be treated by active blood-letting; but the remedy for the permanent disposition to this disease is the most strict abstinence. The most rigorous system of weighed or measured portions of the least nutritious and least stimulant kinds of food is to be enforced.

We must now add a few words upon the celebrated use of abstinence in diseases of the heart and arteries, in the hands of Valsalva, as described by Morgagni, (lib. ii. ep. xvii. § 30,) from the account given to him by Stancarius. Sufficient blood having been taken, Valsalva ordered the food and drink to be daily diminished, until it was reduced to half a pint of gruel in the morning, and less than half that quantity in the evening; to this water alone was added, and that in a certain measure only, medicated by the addition of quince, &c. When the patient was, in this manner, emaciated, and so debilitated that he could not raise his hand from the bed, the diet was slowly and moderately increased, so as just to maintain power enough for raising the body. In this manner these formidable diseases were cured. It is confessed, (§ 31,) that some thought the cure of Valsalva worse than their aneurism. But it was argued that that which was not done early in the disease, with the hope of cure, might become necessary during its progress, without such hope; from the incapacity for swallowing." 21.

The author makes many judicious observations on the injurious effects of abstinence, too long or unnecessarily enjoined. After referring to memoirs which we have published in this Journal, Dr. Hall conveys his own opinion on the morbid effects of inordinate abstinence, in the following passage.

" The first part of the series of the effects of abstinence consists in simple debility and emaciation. The countenance becomes pale, and the expression languid; the muscles of voluntary motion become thinner and feebler; the pulse feebler and smaller. The second part of the series is different. The pulse is augmented in frequency; there is often palpitation of the heart, alternately with syncope; and there is pain of the head, or delirium; symptoms which might be mistaken, by the inexperienced or unwary, for those of increased action and power, whereas they are but the feeble flashes or glimmerings of a light ready to become extinct.

Such a transition in the effects of abstinence is frequently the consequence of an undue administration of this remedy; still more frequently, however, it arises from its inappropriate application. When cases of irritation are mistaken for those of inflammation, the morbid effects of abstinence are particularly apt to occur. The former disease neither requires nor bears the remedy; whilst, in inflammation, it is both essential to the cure of the disease and well sustained by the patient. This is a point which requires to be well investigated. The ancients, and especially Celsus, speak of a principle of encouragement in the sick which they expressed in these words—*difficulter ferre morbum*, (lib. iii. § 3.) There is another principle not less important—*difficulter ferre REMEDIA*. It would be difficult to induce the morbid effects of abstinence when there is a tendency to apoplexy; but it would be very easy to do so if palpitation, or some

other symptom of gastric irritation, were mistaken for disease of the heart, or for inflammation," 21.

Under the head of famine, &c. Dr. Hall has collected much curious and interesting information; but it is unnecessary to dwell on the subject in this place.

ACGOR and ACNE are very well treated of by Dr. Todd, of Brighton. These two articles occupy 18 columns. Achor is considered by Dr. T. to be a cutaneous affection peculiar to children, constituting the elementary form of some porriginous diseases. It seems to be connected with a plethoric state of body and chylopoietic derangement, being most effectually relieved by mild alterative doses of the hyd. cum cretâ, followed by rhubarb and magnesia. Acne occupies 17 out of the 18 columns, and, consequently, is minutely investigated in all its forms and stages. We shall introduce an extract from acne rosacea, or carbuncled face, as a specimen.

" The nose is, commonly, the first seat of this affection. In persons predisposed, who are generally of the middle age, after any exciting cause, as a full meal, heating drinks, or indigestible substances, the extremity of the nose becomes of a deep red colour, more or less intense, which at first gradually subsides with the removal of the exciting cause, but, at length, by repetition, grows to be habitual. In this red shining appearance of the nose, some elevated points of a brighter red colour, sometimes distinct, sometimes in groups, are afterwards observed. These points enlarge, becoming pustules, which suppurate at their summits; but the suppurative process is always imperfectly established, forming seldom more than a small white acuminate point on the apex of the pustule, which makes a striking contrast with the dark damask red colour of the pustule, an appearance which is well represented in Alibert's XXI. plate. This white point of the pustule bursts and forms a thin white scab, which, detaching itself, leaves beneath it a hard phymatous tubercle. These pustules succeed each other, and in this manner the disease perpetuates itself. Sometimes the disease is confined exclusively to the nose, which, from the repetition of this morbid process, and the successive formation of tubercles, increases very considerably in size, being covered with knobs and asperities, whilst the blood-vessels of the surface of the skin are seen enlarged, and the small veins appearing varicosed, have the appearance of bluish lines, strongly contrasted with the general red colour of the surface; or the intermediate skin is striated with reticulations of enlarged cutaneous veins, resembling an injected membrane, an appearance which is correctly delineated in Bateman's LXIV. plate. M. Alibert thinks he has observed, that the right side of the nose is more liable to be affected with this species of acne than the left, a circumstance which he connects with the influence of the state of the liver upon this disease. More generally the size of the nose is not increased, but its form only altered; and the disease extends itself to the cheeks, forehead and chin, so as sometimes to cover the whole face. The red colour of the skin, which is always more remarkable after dinner, or in the evening, than in the morning, is not any where equal in degree, but is always more so in the seat of the pustules. The disease may cease, and return in different degrees of intensity; but after it has continued for some time, the surface of the skin becomes uneven and rough, and if the disease should even disappear, the skin never entirely recovers its natural state."

In general, this eruption produces little discomfort of feeling in proportion to its deformity, seldom more than a slight momentary itching: but some persons have the face in a very irritable state, with a sensation of heat and burning, being frequently obliged to bathe the face in cold or tepid water for relief. After

eating, drinking, or any moderate exercise, they feel a sudden glow of heat in the face ; but it is chiefly when they approach the fire that they suffer most ; it produces in them a sensation of pungent heat, or of burning and itching." 30.

The complaint is supposed by Dr. T. to generally depend on a state of abdominal plethora, or congestion of the liver, rather than upon irritation in the mucous membrane of the primæ viæ. Regulation of diet and regimen is of more consequence than medicine.

"If much local inflammation be present with general plethora, a moderate venesection may render great service. If the eruption is connected with the suppression of any accustomed evacuation, the propriety of endeavouring to restore it naturally suggests itself ; if the menstrual function is laborious, imperfect, or irregular, the proper modification of the method of cure readily occurs ; if a congestive state of the liver is present, or when the liver is more severely affected, mild alterative remedies—as Plummer's pill, taraxacum, and sulphurous mineral waters, as those of Harrogate, are applicable. These last are of known efficacy, and are much to be preferred to the saline mineral waters. In all cases an open state of the bowels is of importance, but much purging is generally detrimental. We have great doubt whether any constitutional remedy has a specific action upon the local disease. In France and Germany the dulcamara and viola tricolor have been much used ; but we think that, united with the general treatment, more benefit is derived from the use of the liquor potassæ taken a few hours after each meal." 31.

This is certainly a neatly executed article.

ACUPUNCTURE is from the pen of Dr. Elliotson, and, of course, is interesting. That acupuncture gives *temporary* relief in rheumatic and neuralgic affections unaccompanied by inflammation, we believe, because we have witnessed this relief ; but that it has ever effected a cure, we do not believe ; because, in every instance that came under our observation, and in many cases reported to us by others, the disease returned. Still, as a temporary refuge from pain, it is a remedy not to be despised, under the limitations above-mentioned. We agree with Dr. E. that, "the most obvious purpose of this operation is to allow the escape of the fluid of cœdema or anasarca through the skin, or of the blood when superficially accumulated."

AGE, by Dr. P. M. Roget, occupies upwards of 20 columns, and as might be anticipated, is executed with talent and erudition. The following brief and rapid sketch is emblematic of the fleeting shadow of man's existence, which passes like a cloud—is dissolved in air—never more to be seen !

"As youth is the state of transition from infancy to maturity, so age is the state of transition from maturity to decay. In the early periods of life, all the powers of the system are directed to the building up of the frame, and of the different organs ; to their extension, consolidation, and perfection ; and to their adaptation to the performance of their several functions. The exertions made for the attainment of these objects are great, and commensurate with the magnitude and importance of the design ; and they give rise to a rapid and varied succession of changes. An abundant store of materials is wanted for these operations ; and although the consumption and renovation of these materials be considerable, yet the supply much exceeds the loss ; and the body, accordingly, continues to augment in bulk. In course of time, these opposite processes of reparation and decay approach nearer to an equality, and, at length, are exactly balanced. The parts then cease to grow ; the system has reached its state of

maturity ; and the object of the vital powers and functions is now to maintain it in a uniform condition of health and vigour, qualified for the exercise of all its physical and mental faculties. It cannot but excite our admiration to contemplate the accuracy of the adjustments by which these objects are so perfectly accomplished, and that equilibrium preserved, with such wonderful constancy, for so long a period of years.

But at length there comes a season when the balance, hitherto so evenly kept, begins to incline ; the powers of the system are less equal to the demands made upon them ; a diminution of energy becomes sensible ; and the waste of the body exceeds the supply. Yet nature is far from abandoning her work : new arrangements are made, and new provisions resorted to for accommodating the system to these changes. In proportion as the supply of materials for repairing the waste of the organs becomes less abundant, a more strict economy is adopted ; the resources of the system are husbanded with greater care ; and the functions thus appear to go on for a considerable period without any material or very manifest alteration. Yet all this time the changes which are going on, though insidious, are no less real. Old age steals upon us by slow and imperceptible degrees, which, even when obvious to others, are often unknown to ourselves. Nature, when the system is entrusted wholly to her laws, thus kindly smooths the path along which we descend the vale of life, and conducts us by easy stages to our destined place of repose. But the number of those who thus gently glide along the stream of years is small indeed, compared with those whose declining age is withered by infirmities or embittered by disease. The ‘Age that melts in unperceived decay’ is rarely met with amidst the numerous and diversified causes of premature decrepitude, to which man, in his civilized condition, is obnoxious.” 35.

We must indulge ourselves and our readers with one other abstract from this highly interesting article.

“The mind, as well as the body, is wasted by time. The first indication of diminished vigour in the intellectual faculties is usually the decay of the memory. The power of recollection, which is immediately dependent upon that of association, appears to have a closer relation to the physical condition of the *sensoprium*, than any other of the mental faculties : for we often observe a failure of memory, while the judgement continues unimpaired. This loss of power is chiefly felt in the case of new associations. Thus recent events are recalled with much greater difficulty than old ones ; and new habits can hardly ever be contracted. The earliest notice that is given of this partial decline of the faculties is generally in the forgetfulness of the names of persons. When carried somewhat farther, the names of things are with difficulty recollected. The mind loses that command of language which it formerly possessed ; hence the tardiness of speech, and heaviness of expression which characterize the conversation of so many persons of advanced age. The garrulity of old persons is also frequently a consequence of the deficiency of memory, which effaces the recollection of what has just been said, and leads to continual reiteration of the same ideas.

Not only are the bodily feelings impaired by age ; the mental sensibility is also blunted, in at least an equal degree, in all that relates to present or recent impressions. Yet it has often been remarked that old persons feel acutely the loss of former friends and companions. How often do we not witness the survivor of an aged couple soon follow his partner to the tomb. The failure of the sight, of the hearing, the senses which connect us most largely with the external world, contribute much to the diminished exercise of the intellect, by abstracting the occasions for exertion ; and we well know that, without exercise, the intellectual as well as the bodily powers stagnate and become torpid. To this cause are often added impediments to bodily exertion arising from rigidity of the membranes, stiffness of the joints, debility of muscles, and impaired ner-

vous energy. The tottering steps and tardy movements of the infirm old man can be accompanied with none of the enjoyment which attends the exertions of limbs animated by the elastic spring of youth. If, under these circumstances, he should unfortunately be deprived of the resources of mental cultivation, can we wonder that he is driven for refuge to the enjoyment of those senses of taste and smell that yet remain; and that he devotes himself to the cultivation of the pleasures of the table, and the artificial excitation of spirituous liquors? Yet even here nature imposes certain limits, beyond which the votaries of luxury are forbidden to pass.

‘ Time hovers o’er, impatient to destroy,
And closes all the avenues of joy.
In vain their gifts the bounteous seasons pour,
The fruit autumnal, and the vernal shower;
With listless eyes the dotard views the store,
He views, and wonders that they please no more.
Now pall the tasteless meats and joyless wines,
And luxury with sighs her slave resigns.’

Need we pursue this ‘strange eventful history’ to the last melancholy chapter of man’s existence, and contemplate the wreck of those exalted faculties which ennable his nature, and of which the deprivation lowers his condition far beneath that of the beasts of the field? Need we dwell upon the sickening spectacle of ‘second childishness and mere oblivion,’ and disclose those mournful contrarieties of our nature, that drew forth the exclamation from the poet—

‘ In life’s last scene what prodigies surprise?
Tears of the brave and follies of the wise.
From Marlborough’s eyes the streams of dotage flow,
And Swift expires a driveller and a show.’

Let us rather draw a veil on this humiliating picture of the frailties incident to humanity, and which forcibly remind us of what

‘ We shun to know,
That life protracted, is protracted woe.’” 42.

Dr. Roget has speculated a little by going in search of some single principle that may account for the various stages of transition from infancy to senectitude, or rather from the embryo to the death of the individual. We shall give this speculation in his own words.

“ Admitting that the increasing density of the cellular substance is the natural consequence of the diminished force of circulation, aided, perhaps, by the increased, or, at least, undiminished power of absorption, may we not advance a step farther, and ascribe the diminution of the force of circulation to the gradual loss of muscular power arising from a decline in the energies of the nervous system? If this be a legitimate inference, then this declension of nervous power, which takes place with more or less rapidity as we advance in life, appears to be the general principle we were in quest of; that is, the ultimate fact to which all others are subordinate. Appearances, then, warrant the hypothesis that a certain stock of vital force is imparted to the embryo, at its first formation, as a provision for carrying it through its destined career of existence. In every action of the system a portion of this power is expended; and the greater the expenditure, the less must there be remaining, till at length, the whole being consumed, all movements cease, like those of a watch which has run down, and of which the main spring has ceased to act.” 42.

To this we would reply, that there is just as good ground for believing that the “nervous power” is regenerated or reproduced in the brain, as that the blood is replenished daily from the chyle—and all parts of the system

daily recruited from the blood. If there was a certain stock of nervous power conferred on the embryo at its first formation, without the power of recruiting that stock, we cannot well conceive the *increasing power* till a certain period, and then its decline. We fear that we know little more than this, that the animal machine comes to maturity of action by powers implanted in it by the hand of the Creator; but that, after a certain period, it begins to feel the wear and tear of time, and at length breaks down like an old hackney-coach in the streets, rather than like a watch, whose main-spring has ceased to act, but which may be easily wound up again by a proper key.

The diseases which play their part in the decline of life are lightly touched upon by Dr. Roget, and the whole article is extremely creditable to that enlightened physician.

CHANGE OF AIR, by Dr. J. Clark, occupies half a dozen of columns, and, like all that comes from the pen of Dr. C., is sensible and judicious.

In the article ALOPECIA, by Dr. Todd, there is shown considerable research. The following extract will shew how this article is treated.

"The immediate cause of the falling of the hairs is unquestionably a diseased state of the follicles which nourish and support their bulbs, having the same relation to them as the capsule or membrane which surrounds the roots of the teeth, (for the process of the formation of the teeth and the hair is perfectly the same); but the precise nature of the diseased state has not been determined. It would seem to depend sometimes upon inflammation of the follicles, sometimes upon their ulceration, sometimes upon a temporary deficient action, and sometimes upon atrophy or death of the follicles. In the body of a man who had become almost entirely bald in consequence of a putrid fever, of which he died, Bichat observed all the pilous follicles in their natural state, and small hairs shooting forwards from their bottom; but he remarks that, before the fall of the hair in aged people, the cavity of the bulbs of the hairs gradually diminishes, and the follicles, which contain the bulbs, at last disappear. The destruction of the pilous follicles may, however, be caused by pressure, by friction, and by other causes. Thus it has been observed to be produced by the pressure of certain subcutaneous tumours.

Alopecia may be a purely *local* and *idiopathic* disease; the affection originating in the follicles themselves. This happens when it arises from external causes, as from the application of quick lime, or other depilatories; from the fumes of quicksilver, as was observed by Forestus in goldsmiths; from exposure of the head to the rays of the sun; from frequent pressure of weights upon the head; and from friction of any hairy surface by the garments or otherwise. Or it may be *local* and *consecutive*, as when the follicles are injured by becoming involved in the inflammation, ulceration, or other morbid process of any adjacent cutaneous disease, as happens in porrigo, impetigo, variola, eczema, elephantiasis, and several others.

Alopecia may also be *secondary* and *symptomatic*, a consequence of general debility and constitutional exhaustion, and hence it attends the convalescence of febrile diseases, and the puerperal state; hence, also, it is a common symptom of the advanced stage of phthisis, of diabetes, and of most cachectic diseases: thus justifying the prudence of the Romans, who estimated slaves affected with alopecia at the lowest price. Hence it is also observed in the nervous debility which follows excessive venereal indulgences or seminal emissions, and has been known to be produced by painful and distressing headaches; by long-continued and intense study; by the depressing passions, as fear; by cares, disappointments, and anxiety. Of this kind was evidently that singular case related

by Ravator, of a person who, after a violent commotion, was attacked with amaurosis of the right eye, and all the hairs of the same side of whose body lost their colour, and fell from the eye-brows and eye-lashes as well as from the head. Of the same nature, also, was, in all probability, the remarkable case of M. le Chevalier d'Epernay,* who after an assiduous application for the space of four months, without any previous symptom of disease, lost his beard, his eyelashes, his eye-brows, and, in short, all the hair of his head and body.

Alopecia may be a *sympathetic* affection, not a symptom of a constitutional disease, but caused by a disease or disordered state of some other organ or system of organs. The most common form of this description which has come under our observation is that which proceeds from chronic inflammation of the mucous membrane of the stomach, giving rise to a particular form of dyspepsia, which has, for this reason, been called inflammatory." 50.

Dr. Conolly, one of the editors, first presents himself as writer of the article ALTERATIVES. Seven columns are dedicated to a consideration of this somewhat vague term, which is now rather receding from the nomenclature of remedial agents. It is well drawn up by the accomplished author, as the following specimen will shew.

" Mercury, in all its various forms, is one of the medicines most commonly employed as alterative; and the great influence it exerts on the whole economy, over all the secretions and excretions and over the nervous system itself, constitute it an alterative, when prudently given, of a most efficacious kind. Even in certain states of fever, mercury has been employed with success for the restoration of the secretions; and, therefore, it may be said, as an alterative. In chronic inflammations, although here, perhaps, the term alterative may be objected to, small doses of the pilula hydrargyri or of calomel are often considered highly serviceable: no cases are more frequent than these, and in none is the practitioner more in need of some means of checking or altering actions, which, although neither violent nor immediately dangerous, are silently effecting structural changes and irreparable mischief. It would certainly appear that, for this purpose, the majority of practitioners rely on the efficacy of mercury, often in combination with opium. In certain instances, of which chronic laryngitis may be cited as an example, as well as in the instances of new formations, even of a malignant character, the addition of a medicine possessing narcotic properties may be useful on the principle of allaying the disturbance of the nervous system, a disturbance but little regarded or acknowledged in such cases, but probably intimately connected with the primary functional disorder in which all morbid changes of structure, and even inflammation itself, must commence. Most persons of experience in medicine have met with examples of chronic disorders of a troublesome rather than of a dangerous nature, which have been ameliorated, or entirely relieved, by the persevering use of some of the forms of mercury; although the medicine may have been given at first without any other reason than that it afforded a chance of benefit. Even irritable states of the bronchial and intestinal mucous membrane certainly sometimes give way under this treatment; but the application of it requires that caution of which nothing but observation can teach the value. The advantage obtained in such cases, and in others not unfrequently met with, from the apparently indiscriminate employment of calomel, may eventually be found to depend upon some general law, which has not yet been explained; or simply, as we believe John Houter thought, on one kind of irritation superseding another, and banishing it from the system. No medicine is so commonly given in disease of the mesenteric glands as calomel; it is by no means rarely administered in scrofula; notwithstanding the general opinion

* Gazette François, Feb. 23d, 1763.

of the unfavourable influence of mercury on the scrofulous constitution; and notwithstanding the common accompaniment with mesenteric disease of a state of intestinal irritation or of chronic inflammation. In almost every varied disturbance of the liver, mercury is one of the first medicines to which many practitioners have recourse, and in the form of the pilula hydrargyri it has been recommended in many disorders of the digestive functions. A practice so common must have been supported by many cases in which it was found useful, although the principle on which the medicine acts, if it be not that of suspending morbid actions, is, in some of the cases, not very easily imagined. In the case in which acute inflammation of membranous parts is checked by the employment of calomel; or depositions, the consequences of such inflammation, are removed, of which iritis may be mentioned as presenting a striking illustration; this medicine is given to produce a precise effect, which experience has shewn to arise from its use. In the chronic forms of indigestion, its operation on the secretions seems to explain the great advantage often arising from it. In the other cases, cases of mere irritation, or cases in which there is a disposition to new formations not ascribable to inflammation, the same medicine is given, often with the same good effects; but the actions which are then interrupted being less understood, the medicine is only called an alterative." 53.

AMAUROSIS, by Dr. Jacob, of Dublin, exhibits an excellent specimen of careful compilation, under the guidance of sound judgment and extensive knowledge in the person of the compiler. All the best ophthalmologic writers are laid under contribution by Dr. Jacob, while no small portion of original information is interwoven by the author into the tissue of the article. A quotation from this dissertation would be like a specimen of St. Peter's by means of a block of Tiburtine stone.

AMENORRHœA is from the pen of Dr. Locock, and is concise, but much to the purpose. The following brief extract will suffice as a specimen.

"The causes of this disease may be shortly stated, as all those which depress the vital powers, viz. a previously delicate and unhealthy childhood, insufficient or improper food, want of pure air and exercise, too close a confinement to study in schools, or to labour in crowded manufactories, the depressing passions, and, in particular, according to many, hope deferred, and disappointed sexual feelings.

In treating the disease, the amenorrhœa must at first be considered as only one of the train of symptoms of disorder of the general health. It is advisable to begin with an active purgative, which will often bring away a large collection of highly offensive motions, with manifest relief to the patient. Small doses of blue pill may be afterwards occasionally repeated, and purgatives of a warm and stimulating character taken every morning, combined with a small quantity of some bitter extract or infusion, until the tongue appears cleaner, and the secretions from the bowels are more healthy. A more decided tonic of the vegetable class, along with myrrh, rhubarb, or aloes, and ammonia, will gradually prepare the stomach for the metallic tonics, and above all others for that medicine most useful in these cases, namely iron, which, in one form or another, may be nearly always taken with benefit in a torpid condition of the venous system. Upon the whole, perhaps, the Griffiths's mixture (*mistura ferri composita* of the *Pharmacopeia*) is the most serviceable of the artificial preparations of iron. At the same time the bowels must be kept fairly opened with the above-mentioned purgatives, those containing aloes being preferable. The diet must be, at first, light and easily digestible; and, as the stomach is prepared for an improved and more nourishing food, wine, meat, and eggs may be taken. Gentle exercise in a carriage or on horseback, particularly the latter, with sea-bathing or the shower-

bath, may be ventured upon cautiously as the strength improves. A pure air is very desirable, and on that account, when the patient has a little advanced, nothing is more efficacious than a residence at Tunbridge-Wells, or some other places where chalybeate springs abound, combining the advantages of change of scene, a salubrious atmosphere, amusement to the mind, and the internal use of the mineral water." 69.

It often happens that the menstrual secretion does not return with restored general health; and then we must have recourse to emmenagogues. Among these are aloes and black hellebore, lytta and savine, myrrh and iron, galvanism and semicupia. Dr. Locock has found the essential oil of savine beneficial; and we have seen the extractum sabinæ excite menstruation when nothing else would. The injection of liquor ammonia with milk into the vagina, has sometimes succeeded. Dr. Coindet, of Geneva, considers iodine as the most powerful emmenagogue. Dr. Locock has exhibited the ergot of rye, with more success, in doses of ten grains twice a day. In irritable habits this medicine should be administered with some caution, as it occasionally excites violent spasms. There is a great deal of information crowded into a small space in this article of Dr. Locock's.

ANASARCA undergoes a considerable extent of investigation, by Dr. Darwell, who draws his information from various sources, but chiefly from Abercrombie, Blackall, Wells, and Crampton. Under the head of Local Anasarca, Dr. D. states it as his opinion that the investigations of Dr. Davis and others have set the pathology of phlegmatia dolens at rest. We are of a very different opinion.

ANGINA PECTORIS is very ably portrayed by Dr. Forbes. We think he has expended some unnecessary labour and erudition on the etymology and synonymy of this curious disease; and there is no doubt but that the whole article is swelled far beyond its *relative* proportion to others of equal or greater importance. We say *relative*, for we do not think that Dr. Forbes has said a word too much respecting the etiology, pathology, or treatment of the disease. We agree with Dr. Forbes in believing the heart itself to be the seat of the pain, during the paroxysm—that the pain is of the neuralgic or spasmoid character—that it often occurs without any organic disease—and that the structural change, when existing, can only be considered in the light of a predisposing or exciting cause of the paroxysm. The following classification is adopted by Dr. Forbes.

"I—*Organic Angina.*

1. Pure, or idiopathic.
2. Complex, or sympathetic.

II.—*Functional Angina.*

1. Pure, or idiopathic.
2. Complex, or sympathetic.

1. The cases that come under the first subdivision of organic angina are few in number. They are those in which the anginous paroxysms seem to be the direct consequence of organic disease of the heart occurring in persons otherwise healthy. Cases of this kind are seldom very well marked, the anginous symptoms being either feebly manifested, or overpowered by the greater intensity of the more ordinary symptoms of heart disease. These may be considered, in one respect, as the worst cases of angina, inasmuch as they hold out little prospect of cure or even of alleviation. Our influence over diseases of the heart

is very slight, except they are partly the effect of some other disorder of a more curable kind.

2. Under the next subdivision of organic angina, we would include the greater number of the best marked and more severe cases of this disease. In these, along with the organic affection of the heart or vessels, or both, (probably not very great, or, at least, marked rather by the paroxysm of angina than by the general symptoms of diseased heart,) we have some obvious general disorder of the system. In cases of this kind, the organic disease of the heart and aorta seems often to be a consequence of the co-existing disorder; if not a consequence, it is always greatly aggravated by its presence; and hence the most successful medical treatment of the angina is that which has direct reference to the concomitant disorder.

Among the various structural affections formerly detailed as constituting the essential or organic character of these two classes of cases, different authors at different times, have been anxious to select some one lesion as the exclusive cause of the disease. The principal of these have been,—ossification of the coronary arteries, ossification and dilatation of the aorta, accumulation of fat in or around the heart, &c. To these may be added, with equal propriety, several other morbid states of the heart, particularly—softening of the muscular substance of the heart, dilatation of one or more of the cavities, &c. It will be at once admitted as a necessary consequence of the result of the dissections given above, that no one of these lesions is entitled to be considered as exclusively the cause of the paroxysm of angina; and that some of those which have been most generally believed to be such, are equalled or exceeded in point of frequency by others. Thus we see that the ossification of the coronary arteries, formerly considered by so many as the chief or sole cause of the paroxysm, is only of the same frequency of occurrence as disease of the valves, while disease of the aorta is much more frequent than either. But we think it probable that much slighter deviations from the normal condition of the organs of circulation than any above noticed constitute quite as frequent causes of this disease; more particularly of the milder cases. In a certain proportion of this class of cases it is not always possible to detect, during life, the existence of any organic lesion, much less the precise lesion; and from the same cause, (its slightness,) it is frequently overlooked in the examination after death. In a considerable number of such cases, however, the nature of the morbid deviation is discoverable both during life and after death. The most common of these slighter deviations from healthy structure are, a thin and slightly dilated state of the ventricles, and a want of tone in the muscular fibre.

3. We consider cases of the kind just mentioned, in which the organic deviation is so slight as to be hardly discoverable, as constituting the greater number of those usually viewed by practitioners as examples of pure functional or nervous angina. It is obvious that in extreme strictness of language they are not entitled to this name; yet if the deviation is only so slight as to constitute mere feebleness, (and it is often nothing more,) they are probably as well entitled to the name as most other diseases commonly denominated nervous. But it must be admitted that in persons possessing the best proportioned hearts, and in which no deviation whatever from the normal structure can be detected either during life or after death, there may and do occur paroxysms of angina. The proportion of such cases is however very small under any circumstances in a state of uncomplication with other diseases; and we look upon them rather as of possible occurrence than as having certainly met with them in practice. Conjoined, however, with some other disorder, as in the next class of cases, we conceive they are by no means rare.

4. Under the head of complex or sympathetic functional angina, we must comprehend a large class of cases; and, for the reasons stated in the last paragraph, although not strictly philosophical, we would, for practical purposes, include

under the present division all the cases of nervous angina complicated with other diseases, whether the organs of the circulation are perfectly sound and well proportioned, or only deviating in a very slight degree from this state of integrity. Under this head are comprehended a very considerable proportion of the cases met with in practice, and not a few of those which present symptoms of the greatest severity in the paroxysm." 88.

The phenomena claiming the name of angina pectoris, are frequently complicated with dyspepsia, which, both in its earliest and latest stages, aggravates almost every other complaint. Plethora, obesity, gout, and rheumatism are frequently connected etiologically with the disease under consideration.

Some diversity of treatment is necessary according to the constitution of the patient and the nature of the complaint. In the robust and plethoric, venesection sometimes relieves the paroxysm. Under other and different circumstances, however, we must have recourse to a different class of remedies. Opiates are less effectual than might be expected, in severe cases. A paroxysm rarely occurs without a previous accumulation of gas in the stomach, which, indeed, often appears to bring on the attack. The extrication of this gas is of the greatest importance. Dr. F. touches on the subject of dyspepsy, as a frequent cause or complication of angina pectoris, in the following terms.

" Of the treatment of simple or primary dyspepsia, as co-existing with angina, we shall only here remark, that much more is to be effected by a rational system of diet and regimen, both of body and mind, than by medicines ; and that, as a general rule, the cautious, cooling, and macerating treatment of our continental neighbours, will be found more successful than the endless ingestion of bitters and drastic purges, so much practised in this country. In many cases, no doubt, the stomach is simply debilitated, and requires tonics ; but it is much more frequently irritated or inflamed, and requires soothing and depletion. The prevailing and most injurious error among many practitioners, is, apparently, to overlook the fact, that the stomach or intestinal canal can be inflamed without pain or the more common external marks of febrile action ; or, being so, that they can be injured by the stimulus of purging. But it is in the complex constitutional disorder, which may be termed *secondary dyspepsia*, that these observations are most applicable. It is to be feared that the true nature of this disorder is not well understood by the generality of practitioners. It is one of those diseases which may often be said to be the *opprobria medicorum* in the worst possible sense ; since it is not seldom caused, and is very frequently fixed and perpetuated, by injudicious treatment. In no other disease is the over-active, or, as our neighbours term it, *heroic* mode of practice, so prevalent in England, productive of such evil effects ; and in none is that mild, simple, yet comprehensive system of treatment, which embraces the whole of the disordered organs and functions, and rather prompts nature to act rightly than supersedes her agency, so strikingly beneficial." 92.

Under the head of ANODYNES, Dr. Whiting has given us a short, but interesting disquisition on the nature and causes of pain, for which the anodyne is prescribed. The term indeed is very comprehensive. Almost all diseases are accompanied by pain—and consequently every thing that removes the cause of pain is an anodyne. Nay, what is anodyne in one kind of pain, will be dolorific in another. Venesection will relieve the pain of pleurisy ; but, generally speaking, will aggravate that of spasm. Opium

will do just the reverse, and so on. The following passage contains good advice.

"The exhibition of anodynes in inflammation, however, requires the exercise of much judgment. This remark appears to be the more necessary, because the employment of some of them, especially of opium and the prussic acid, has been of late strongly recommended as antiphlogistic remedies: whether they are antiphlogistic or not is not now a question for our consideration, the present object being to guard the practitioner against their indiscriminate employment in inflammation. Pain, or tenderness, is one of the most unequivocal signs of the existence of inflammation, when taken in connexion with its other symptoms; and during the treatment of inflammation, when no *anodynes* have been employed, the continuance of the pain will often afford an indication, to the practitioner, that further active measures are necessary: but it is quite certain that inflammation, in a considerable degree, may be going on while all feeling of pain is suspended by the effect of an anodyne; so that in such a case the indication of pain will be lost, the disease may be rendered obscure, and the treatment inert. Besides the reason just assigned for caution in the employment of anodynes, the stimulating quality which some of these remedies possess, ought to put the practitioner on his guard against the indiscriminate use of them when treating inflammation. It appears better, then, for the purpose of relieving pain, to depend generally on the means calculated to lessen or remove the inflammation itself, at least in all recent and active cases: this must be considered the most judicious mode of easing the feelings of the patient; but instances are daily met with in practice, especially of chronic inflammation, where the suspension of pain by anodynes is indicated by the considerations which have already been assigned." 97.

ANTHELMINTICS are treated, in a very succinct but perspicuous manner, by Dr. A. T. Thomson. He arranges the whole class under three heads—evacuant—specific—and corroborant anthelmintics. Among the evacuants, the powdered tin is placed at the head: It is supposed to act mechanically, by irritating the worms, and dislodging them from their holds on the intestines, rendering them liable to be swept away by a purgative. The dolichos pruriens acts in the same manner. The chemical anthelmintics are lime-water and alkalies, which dissolve the mucus forming the nidus of the parasitic animal. Purgative anthelmintics have no other effect than clearing away the superabundant mucus, and such worms as are detached from the coats of the intestinal canal. The specific anthelmintics are the oil of turpentine, the male fern, the bastard cabbage-tree of Jamaica, and the Indian pink, &c. Dr. Thomson has seen worms expelled by the vinum colchici, when administered for another purpose; and, therefore, thinks it entitled to the appellation of anthelmintic. The corroborants are bitters, chalybeates, and such medicines as strengthen, not only the alimentary canal, but the whole system, and thus prevent the regeneration of worms when once expelled. This article, though very concise, is very fairly executed.

ANTIPHLOGISTIC REGIMEN, by Dr. E. Barlow, occupies little more than a page of the work, and briefly adverts to the effects of bodily rest, low diet, cool air, and mental repose.

ANTISPASMODICS are disposed of by Dr. Thomson. The term is intelligent enough; but the effect is not often clear, nor the operation of the medicine

satisfactory. Dr. Thomson has not been able to throw much light on the matter, as may be seen by the following short extract.

"The chief circumstance in which antispasmodics differ from narcotics is, that the administration of the former is not followed by the insensibility to impressions, and collapse, which almost invariably follows the exhibition of narcotic substances. No such effects can be induced by antispasmodics, even in large doses; yet they are as powerful as narcotics in repressing inordinate muscular action. In explaining, therefore, the difference between antispasmodics and narcotics, we may hazard the opinion that it is probable the impression exerted on the extreme nerves by a narcotic is confined to those of sensation, and must be communicated to the brain before the effect is produced; whereas that caused by an antispasmodic is confined to the nerves of motion, and produces an immediate and more permanent result by some changes effected in the state of the motor nerves, independent of any communication with the sensorium. If this opinion be correct, antispasmodics, in the strict meaning of the term, stand in the same relative position to narcotics as astringents to tonics. But, whatever may be their mode of action, the distinct nature of an antispasmodic, acting simply as such, is very obvious; and antispasmodics may be regarded as holding an intermediate place between narcotics and tonics,—less diffusible, but more durable than the former,—more immediate, but less permanent than the latter." 102.

It is hardly necessary to say, that antispasmodics comprehend every kind of stinking and odoriferous stuff in the *materia medica*.

AORTIC ANEURISM is ably treated of by Dr. Hope, who has devoted so much attention to organic diseases of the heart and large vessels. We shall introduce an extract, portraying the general signs of aneurism of the aorta.

"When an aneurism is buried deep in the chest, and not capable of being detected by the sight and touch, it does not present a single general sign which is peculiar to itself, and, therefore, pathognomonic of its existence. There are even cases in which it occasions no functional derangement—no inconvenience whatever; and the first circumstance that unveils the truth is, the sudden death of the patient, while apparently in the enjoyment of perfect health. We have met with six or seven instances in which large aneurisms had existed without awakening even a suspicion in the mind of the medical attendant. One, in particular, eluded the penetration of a distinguished foreign auscultator, though he explored the lungs with eminent success. We are acquainted with only one general sign of aneurism of the thoracic aorta which is unequivocal and certain, namely, a tumour presenting externally, and offering an expansive as well as heaving pulsation, synchronous with the action of the heart. Of the remaining general signs, a large class are identical with those of organic disease of the heart, viz. palpitation, dyspnœa, cough, tendency to syncope, terrific dreams, starting from sleep, haemoptysis, livid or otherwise discoloured complexion, cerebral or hepatic congestions, serous infiltration, &c. This identity arises from an identity of cause; namely, an obstacle to the circulation, which depends either upon the aneurism alone, or conjointly upon it and a disease of the heart, to which, sooner or later, the aneurism almost invariably gives birth. It is obvious, therefore, that the signs of this class are equivocal. There are, however, certain other general signs which are more characteristic: yet even these are of themselves ambiguous and unsatisfactory: as they only bespeak lesions of the viscera, or derangement of their functions, but do not proclaim the latent cause of the mischief. But when they coincide with the signs derived from auscultation, they lose their ambiguity, and rise into real importance; for the two classes of signs, general and stethoscopic, are a commentary on each other, and re-

ciprocally borrow a precision and certainty of which they are individually destitute. We shall succinctly describe the general signs to which we refer, and subjoin to each the principal sources of fallacy. The means of detecting the latter we shall point out in the final summary.

1. When the tumour has attained a considerable magnitude, the cavity of the chest is preternaturally crowded, and the patient complains of a sense of constriction, infarction, and oppression. But these sensations are common to almost all diseases of the chest.

2. The radial pulses are sometimes dissimilar, or one is extinct; an effect dependent on obstruction or obliteration of the arteria innominata, or left subclavian. But the difference of the two pulses at the wrist may proceed from a variety of causes independent of aneurism of the aorta, as, contraction of the origin of either subclavian from osseous, cartilaginous, steatomatus, or other deposition; obstructions in the course of the artery, occasioned by tumours, wounds, subclavian aneurism, &c.; an irregular subdivision of the humeral, brachial, or radial artery. We have known the most ludicrous surmises occasioned by the radial crossing to the outside at the middle of the fore-arm, and the superficialis volæ supplying its place at the wrist.

3. When the origin of either subclavian is contracted, the pulse at the corresponding wrist is a little later than the ventricular systole. We have not found this symptom uniformly present. The heart is more frequently its source than the aorta, and we have observed it to be most considerable in cases of regurgitation into the left auricle; but obstruction of the aortic valves may occasion it in a minor degree, particularly if this lesion is accompanied with extenuation or atony of the ventricular parietes. When the sign exists in both pulses, the presumption is strong that its source is in the heart.

4. According to Corvisart, a purring tremor—the *frémissement cataire* of Lennec—is sometimes perceptible to the hand at the middle or upper part of the sternum, and indicates aneurism of the ascending aorta. Purring tremor, above the clavicles, is an almost constant concomitant, and therefore a valuable sign, of dilatation of the arch; but, according to our experience, it is unfrequently and imperfectly occasioned by sacculated aneurisms, especially if lined by strata of lymph. We have never known the tremor to be occasioned below the clavicles by dilatation, unless the enlargement was so great as to extend beyond the lateral margins of the sternum, and allow the tremor to be felt through the intercostal spaces; but we have met with one case in which a dilatation of the pulmonary artery, though not voluminous, afforded a marked tremor between the cartilages of the second and third ribs on the left side: this, however, is not remarkable, as the artery *naturally* lies nearly opposite to the part described. We have never known a sacculated aneurism create a tremor below the clavicles, unless the tumour had eroded the bones of the chest, and presented externally underneath the integuments.

But the purring tremor may be occasioned in any part of the chest by mucous rattles, particularly those of the snoring kind, in the large bronchial tubes; and we have observed that, when derived from this source, it is a very common cause of deception, in reference both to aneurisms of the aorta and ossifications of the heart. Purring tremor of the pulse is regarded as a sign, though it is a fallacious one, of ossification of the aortic valves. From many dissections, it has appeared to us to be generally connected with two circumstances, viz. a powerful action of the heart, and ruggedness, without appreciable obstruction, of the aortic orifice, or interior of the vessel. It, therefore, seldom exists, unless either the action of the heart be accelerated, or the left ventricle be hypertrophic.

5. When the trachea, or primary bronchial divisions, are compressed by an aneurismal tumour, a harsh wheezing, or sibilous sound, proceeding deep from the throat, characterizes the respiration; the voice is either croaking or reduced to a whisper, or it is a compound of both; the breathing is often extremely la-

borous, and when the heart is simultaneously diseased, dyspnœa sometimes occurs in paroxysms of the most suffocating severity. When the œsophagus is compressed, deglutition of solids is rendered difficult, and sometimes impracticable; for the descent of the morsel excites an excruciating pain from the summit of the sternum to the spine, or lancing deeply in every direction through the chest.

But compression of the trachea, or œsophagus, with the above symptoms, may be occasioned by tumors of any description. Wheezing respiration may proceed from an accumulation of glutinous mucus in the great branches. We have likewise known it produced in an extreme degree by laryngitis with thickening of the soft parts covering the arytaenoid cartilages, and also by ossification and ulceration of the larynx from strumous, syphilitic, and mercurial disease. So difficult is it to distinguish the seat of wheezing respiration, that it has in many instances been imputed to an affection of the larynx, when it was in reality occasioned by an aneurism of the aorta; and bronchotomy has several times been actually performed with the view of obviating suffocation.

6. When the vertebrae are eroded, the patient suffers an intense terebrating pain in the spine; and when the brachial plexus of nerves is compressed by the tumour, an aching sensation pervades the left shoulder, neck, scapula, and arm, with numbness, formication, and impaired motive power of the limb. But I have met with cases in which nearly similar pains were experienced, although there was no destruction of the vertebrae; and it is common to hear individuals affected with rheumatism or spinal disease make the same complaints. The affection of the arm may be occasioned by various forms of organic disease of the heart, and it thus constitutes a part of that concatenation of symptoms which are denominated angina pectoris. We have likewise often met with it in hysterical females subject to palpitation, and occasionally in cases of pericarditis. In all these cases the pain probably originates in irritation of the cardiac plexus of the sympathetic, propagated to the brachial plexus.

7. When, in consequence of an adhesion between the aneurismal sac and the pleura, the blood plays upon the lungs, a sense of ebullition is said to be experienced. But the same symptom is familiar to individuals labouring under phthisis, or chronic mucous catarrh: and it proceeds from the successive bursting of large bubbles, formed by the transmission of air through the fluid in tuberculous caverns, or in the greater bronchial ramifications.

8. It occasionally happens that the patient suffers excruciating pain from a spasm, pursuing the course of the diaphragm, and binding the chest around, as with a cord. This symptom is too vague to be important, and it also occurs in hysteria, gastralgia, colic, spinal diseases, and rheumatism of the diaphragm.

9. A pulsation is felt underneath the sternum, or ribs, at the superior part of the chest. This, although one of the least equivocal signs of aneurism, is not without ambiguity. It may be occasioned by a tumour of any description, as an enlarged gland, or a cancer, interposed between the sternum and the aorta, and receiving the pulsation of the latter. Even Dr. Baillie says, ‘But we are not to conclude from this symptom (viz. pulsation at the superior part of the chest) that there is certainly an aneurism. I have felt the same kind of pulsation in other cases; as, for instance, where the pericardium was found strongly to adhere to the heart; where there was a slight inflammation upon the surface of the heart, with a little more water than usual in the pericardium; and where a morbid enlargement had taken place in the heart, without any aneurismal swelling.’ Every one much conversant with disease must have made the same observations.

10. A pulsation is felt above the sternum or clavicles. But this may be occasioned, 1st, by enlarged glands or other tumours seated on the subclavian artery, and receiving its pulsation; 2d, by varix of the jugular vein at its junction with the subclavian; both of which conditions have deceived expert practitioners; 3d, by subclavian aneurism. This affection sometimes resembles aneurism of the

aorta so exactly, that it is extremely difficult to distinguish them. Allan Burns records a case in which all the eminent surgeons of the district were unanimous in pronouncing the affection subclavian aneurism, yet it proved to be aortic.* Sir Astley Cooper has published a number of similar cases, and one is mentioned by Professor Monro tertius.† 4th. A pulsation above the sternum or clavicles may be occasioned by carotid aneurism. This, also, may readily be confounded with aneurism of the aorta, or of the subclavian artery. In April, 1826, we saw a case at Guy's Hospital, which led to much deliberation respecting the propriety of taking up the carotid above a pulsating tumour, supposed to be an aneurism of that artery. It was finally decided that the tumour was too low, and the design was judiciously abandoned. The affection proved to be a dilatation of the aorta and arteria innominata. The carotid was sound. This state of parts was indicated to us by the stethoscope. Mr. Hodgson met with a similar case.‡

11. The superior and middle parts of the chest are dull on percussion. But this sign is common to an infinity of other diseases, and the resonance is seldom impaired unless the aneurism be very large." III.

The second part, or fasciculus, contains several important papers ; but it will not be in our power to notice them all. We shall only allude to *new names*, as they appear on the long list of collaborateurs, so as to be able to introduce some specimen of contribution from each.

APHONIA AND APHTHÆ, two short articles, are from the pen of one of the most talented of contributors to this work—Dr. Archibald Robertson, of Northampton. In these two articles there is no scope for Dr. Robertson's abilities and practical knowledge ; but we venture to prognosticate that these abilities will be rendered conspicuous before the Cyclopædia Medica is closed.

" We have sometimes met with aphonia depending upon atony, or relaxation of the vocal chords, in consequence of long-continued over-exertion of the voice in speaking, shouting, singing, or the like.

It is also now and then caused by ulcération of the lining membrane of the larynx and its cartilages ; a disease that gives rise to rapid emaciation, hectic fever, profuse expectoration of frothy mucus, and the other frightful symptoms known to modern practitioners under the name of *phthisis laryngea*. A fatal case of this sort, most distressing in all its details, lately came under our observation, where the ulceration of the cartilages of the larynx occurred as the *sequela* of syphilis.

For the most part, however, aphonia, where it occurs without any palpable disorder, or structural lesion, of the organs of speech, is a modification of hysteria ; that Protean malady which assumes such various shapes and hues, and gives rise to such irregular, anomalous, and perplexing symptoms ; resisting for months, or even years, the most assiduous and skilful efforts of the practitioner ! In cases of this class, the loss of voice is owing to irregular distribution of the nervous influence. This again is caused by general irritability, or susceptibility, of the whole nervous system ; or, in other words, by 'the hysterical temperament.' We shall seek in vain to restore the voice until we have removed that hysterical diathesis on which the loss of it depends.

Cure.—When the disease has not arisen from a cause which contra-indicated

* Surg. Anat. of Head and Neck, p. 30.

† Elements of Anat. vol. ii. p. 249.

‡ On the Diseases of Arteries, p. 90.

emetics, we have generally begun with one; and the following is what we have commonly employed, repeating it at intervals of three or four days, and adding to it, where the patient was robust, from gr. ss. to gr. i. of tartarised antimony:

R. Vini Ipecacuanhae f. 3ix.

Oxymellis Scillæ f. 3iii. M.

The success that has attended its exhibition has been most conspicuous.

Where the disease has appeared symptomatic of catarrh, we have followed up the emetic by saline, demulcent, and expectorant medicines. Leeches, but more especially blisters, to the fore part of the throat, have had an excellent effect.

Where aphonia seems premonitory of apoplexy, the most prompt and effectual depletion by blood-letting, cupping, and purgatives, must be resorted to. Where, on the other hand, it is the consequence of apoplexy, we have chiefly relied on cupping inter scapulas, leeches to the temples, a blister to the head, and, above all, a seton in the nape of the neck.

When aphonia is symptomatic of hysteria (as it so often is), the constitutional treatment adapted to the latter must be had recourse to. We would advise the following formulæ, which we have proved by experience to be well adapted to this and many other varieties of hysterical disorder :

R. Ferri Subcarbonatis 3i. ad 3ss.

Pulveris Valerianæ, gr. x. M. fiat pulvis ter die sumendus.

Or the following pills and mixture may be prescribed :

R. Pilulae Galbani Comp.

Pulveris Radicis Pyrethri aa 3i.

Olei Anisi guttas vi. M. tere simul optime, et divide in pilulas xxiv. quarum sumat ii. vel iii. omni nocte.

Necnon, R. Sulphatis Ferri, gr. ii.

Acidi Sulphuric. Dil. M. x.

Solve, et adde

Infusi Gentianæ Comp. f. 3ix.

Aquæ Cinnamomi f. 3iii.

Sulphatis Magnesiæ, 3i. M. fiat haustus bis quotidie sumendus.

With the above plan, the shower-bath every morning, at first tepid and then cold, (with or without the addition of salt to the water) may be conjoined, and should be persevered in for several weeks.

It is not unworthy of remark that, in one case of this disease, which had existed long, and resisted a great variety of remedies, we were fortunate enough to effect a cure by half-drachm doses of *balsamum copaibæ*, given three times a day, rubbed up with mucilage of gum arabic and peppermint or cinnamon water." 119.

APOPLEXY is treated of by Dr. Clutterbuck—and we think the article could hardly have been put into better hands in this country. The Doctor's attention to affections of the brain and its membranes, has long been exerted, in consequence of his theory of fever, which, although it has not been productive of general conviction among the profession, must have greatly increased the author's experience and sphere of observation. The following extract will shew Dr. C.'s opinions respecting the nature, or rather the proximate cause of apoplexy. They will not be new to those who have frequented the London Medical Society, where many a long discussion has occurred on the subject.

" 1st. The brain is enclosed in an unyielding case of bone, the cranium or skull, the contents of which are by this construction excluded from the influence of atmospheric pressure.

2dly. The cavity of the skull is always accurately filled by its contents, name-

ly, the encephalon or general mass of brain, including the membranes, and vessels, and the blood contained within them. So long as the skull is perfect, there can be no rising and falling of the brain, so as in the latter case to leave a vacuity between the skull and the surface of the brain, these parts being always in actual and close contact.

3dly. The contents of the skull solid as well as fluid, if not absolutely incompressible, at least are so by any force that can by possibility be applied to them during life; and there is no air, or other elastic fluid, to be found within the cavity.

This incompressibility of the cerebral substance is easily demonstrated by experiment. It is a property by no means belonging exclusively to the brain, more than to the whole of the animal solids. This is the less to be wondered at, when it is recollect how large the proportion of water is which enters into the composition of these, and that water, as well as other fluids, is so nearly incapable of compression as to require a vast force to render it at all perceptible. But although the substance of the brain, in common with other animal solids, be incompressible, its blood-vessels will readily yield to pressure, so as to be emptied of their contents; a necessary consequence of which is, a stoppage of the circulation in the part so affected. The pressure may be made to take place on any part of the brain, even the most remote from the principal vessels; yet nevertheless the pressure, by operating through an incompressible substance, may influence vessels the most distant, so as thereby to impede, if not wholly interrupt, the cerebral circulation.

The circumstances above stated with respect to the brain, lead to very important deductions, both theoretical and practical. It follows *ex necessitate rei*, that no material variation can take place, within a short period, in regard to the absolute quantity of blood in the brain. No additional quantity can be admitted into the blood-vessels situated there, the cavity of the skull being already completely filled by its contents. A plethoric state or over-fulness of the cerebral vessels altogether, though often talked of, can have no real existence; nor on the other hand can the quantity of blood within the vessels of the brain be diminished, any more than can wine or other fluid be drawn from a cask without furnishing an equivalent for the portion abstracted from it, by the supply of an equal bulk of air, which in the case of the brain can of course find no entrance. No abstraction of blood therefore, whether it be from the arm or other part of the general system, or from the jugular veins, (and still less from the temporal arteries,) can have any effect on the blood-vessels of the brain, so as to lessen the absolute quantity of blood contained within them.

From the experiments of Dr. Kellie, it was found that in animals bled to death the brain still contained the usual quantity of blood; and in some cases the superficial veins were found gorged with blood, and the sinuses full; the rest of the body being at the same time blanched, and drained of its blood. In a few instances, the brain appeared to contain less blood than usual; but then there was found some serous exudation. When the cranium of the animals subjected to these experiments was perforated before they were bled, the brain was as much emptied of its blood as the rest of the body. In two instances of persons that had been hanged, the cellular membrane of the whole head externally was turgid with blood; but nothing peculiar was observed in the state of the vessels of the brain itself. When blood is suddenly or rapidly extravasated anywhere within the skull, the space thus occupied can only be furnished by the compression and consequent emptying of the blood-vessels in other parts of the brain; and in the same degree that this happens, it is evident that the circulation of such parts must be interrupted. But in the formation of tumours within the skull, and during the slow accumulation of serum from inflammation or any other cause, the cerebral substance itself may be absorbed, to an extent corresponding with the bulk of the tumour, or the quantity of serum deposited. The

circulation of the brain may then go on uninterruptedly, and thus the apoplectic symptoms be prevented.

But although under ordinary circumstances, the absolute quantity of blood contained within the vessels of the brain must remain the same, there may be great differences in regard to its distribution, and the force and velocity with which it is moved. Thus, the arteries of the brain altogether may be unusually distended with blood; but in this case the veins will be in the same degree compressed and emptied, and the circulation of the organ proportionally interrupted, with a corresponding interruption of functions.

Again, there may be a partial fulness or distension of vessels in one part of the brain only, but this must be at the expense of the rest of the brain, which will be proportionally deprived of the usual supply of blood. This will be the case in circumscribed cerebral inflammation, as well as in other cases of partial excitement of the organ. The different parts of the brain will then be in different, and perhaps opposite states, in regard to the performance of their functions. The functions of one of the cerebral organs may be excited, while those of another may be imperfectly carried on or depressed. Such an inequality in the state of the cerebral functions is observable in most diseases of the brain; for there are probably few in which the whole organ is simultaneously and equally affected.

In like manner there may be great diversity with respect to the force and velocity of circulation in the brain; the absolute quantity of blood in the vessels remaining still the same. In this way the functions may be more or less excited, or more or less disturbed. These changes in the state of the cerebral circulation are all independent of the heart, the action of which has but little influence over the brain or its functions. It follows, from what has been now stated, that blood-letting, when employed as a remedy in apoplexy, or other brain-affections, however useful it may be and undoubtedly is, in many cases, does not effect its purpose by diminishing in any degree the absolute quantity of blood in the brain, but by reducing the velocity and impetus of the circulation there, and which it does by influencing the general system.

We have seen that the changes observed in the brain of apoplectic persons are very dissimilar; and that, in some instances, as has been stated above, no material deviation from the natural state of parts has been found; it is plain, therefore, that such changes, when they do occur, cannot be the proximate cause, the *causa continens*, of the symptoms, but are to be considered, at most, as remote causes; and, with regard to some of them, are to be looked upon rather as mere coincidences than causes.

The opinion that appears to prevail most generally at present, as to the immediate cause of the suspension of functions that constitutes the apoplectic state, is that the remote causes of the disease, such as extravasated blood, and accumulation of serum, produce a compression of the cerebral substance, thereby interrupting its functions. But, besides that some of the remote causes of apoplexy have no apparent tendency to make any direct pressure on the brain, it must not be overlooked that the cerebral substance being in its nature incompressible, cannot, so long as the blood is contained within its vessels, be exposed to greater pressure at one time than another. It must be in some other way, therefore, than by compression of the substance of the brain, that the remote causes act in producing their effect. It cannot be questioned that pressure on the brain of any kind, if carried to a certain extent, is capable of interrupting the functions of the organ so as to induce apoplexy; but there is good reason to believe that the pressure operates upon the blood-vessels, so as to impede mechanically the passage of the blood through them;—in a word, that interrupted circulation in the brain is the proximate or immediate cause of that temporary suspension of the sensorial functions which constitutes the apoplectic state."

The Doctor's peculiar views are, that the veins of the brain are never over-distended during life—and that the congestion or distention is always in the arterial system. We need hardly say that he is unable to shew good proof of this theory. We are ready to grant that, from the peculiar condition in which the brain is placed, there can be very little additional blood forced into it at any time; but the *pressure* upon the organ may be very much more at one time than another—and, from disease of vessels or parts, there may be much *inequality* of the circulation induced by apoplectic causes.

Dr. C. makes some judicious observations on the profuse and indiscriminate venesectiōns which are performed in apoplexy, without regard to the exciting causes, or to the true nature of the disease. His observations will be productive of good effects in many cases—they will puzzle the inexperienced practitioner in others.

PULMONARY APOPLEXY. This is shortly but satisfactorily portrayed by Dr. Townsend, well known as the translator of Andral. As this is an affection comparatively little known to the generality of medical men in this country, we shall endeavour, as briefly as possible, to put our readers in possession of the present stock of information on the subject. The name is obviously improper; but, having been once introduced and established, we suppose it will now be retained. Andral has proposed to denominate the disease *pneumo-hæmorrhagia*, in opposition to *broncho-hæmorrhagia*, in which the blood escapes from the mucous membrane of the bronchi. In pulmonary apoplexy, blood is extravasated into the vesicular, and probably also into the cellular membrane of the lung. Now haemoptysis may arise either from bronchial haemorrhage or exhalation, when no rupture of vessels can be discerned with the greatest care after death; or from rupture of vessels and extravasation into the substance of the lung, that is, from pulmonary apoplexy. The former cause is infinitely the more frequent. The disease was hinted at by Haller—described by M. Lereille in 1816—by Dr. Hohnbaum, under its present name, in 1817, and best of all by M. Laennec, in 1819. It varies in its symptoms, causes, degrees, anatomical characters. It may be broadly said to have two leading forms, the circumscribed and the diffused. M. Laennec's description of the anatomical characters of the former cannot be surpassed in accuracy.

"A remarkable induration of the pulmonary substance, equal to that of the completest hepatization: the induration, however, is very different from the inflammatory affection of the lungs distinguished by this term. It is always partial, and rarely ever occupies a considerable portion of the lungs: its more ordinary extent being from one to four cubic inches. It is almost always very exactly circumscribed, the induration being as considerable at the very point of termination as in the centre. The pulmonary tissue around is quite sound and crepitous, and has no appearance whatever of that progressive induration found in pneumonia. The substance of the lung is indeed often very pale around the haemoptysical induration; sometimes, however, it is rose-coloured, or even red, as if tinged with fresh blood; but even in this case the circumscriptiōn of the indurated part is equally distinct. The indurated portion is of a very dark red, exactly like that of a clot of venous blood. When cut into, the surface of the incisions is granulated as in a hepatized lung; but in their other characters these two kinds of pulmonic induration are entirely different. In the second degree of hepatization, we can perceive distinctly the black pulmonary spots, the blood-vessels, and the fine cellular interseptures, all of which together give to this morbid state the as-

pect of certain kinds of granite. In the induration of haemoptysis, on the contrary, the diseased part appears quite homogeneous, being altogether black or of a very deep brown, and disclosing nothing of the natural texture of the part, except the bronchial tubes and the larger blood-vessels. The latter have even lost their natural colour, and are stained with blood. In scraping the incised surfaces of their parts, we can detach a small portion of very dark, half-congealed blood, but in a much less proportion than we can press out the bloody serum from a hepatized lung. We sometimes find two or three similar indurations in the same lung, and frequently both lungs are affected at the same time."—*Lan-*
ennec, translated by Forbes."

To verify the above description, the extravasations of blood must be limited in extent, circumscribed by the interlobular septa, and the patient must have survived, as he usually does, for a certain length of time, in order that coagulation and condensation of the fluid blood may have taken place. In the other form of the malady, which is still but a variation in degree, not in kind, the extravasation is greater, the blood diffused through the texture of the lung, which is broken down by it, and the former may even have burst through the pleura pulmonalis and lie in the pleural cavity. There is also a sort of intermediate grade between the two, in which the centre of a mass of haemoptoic engorgement is soft, and filled with a clot of pure blood. A young man died of organic disease of the heart, in the Whitworth Chronic Hospital, after experiencing a violent attack of haemoptysis about a week before his death. The lower lobe of the right lung was occupied by a mass of haemoptoic engorgement as large as an orange, and contained in its centre a clot of dark-coloured blood as large as a hazel-nut, the cavity having been evidently formed at the expense of the pulmonary parenchyma.

In the more advanced, or rather more severe variety, for it is a measure of extent, and not of stages, the extravasation is not circumscribed, solid, nor granular when incised, but soft and fluctuating to the touch, and, when cut into, exhibiting a mixture of fluid and clotted blood, diffused through the parenchyma of the lung, which is ruptured and broken down. The blood, in these cases, is seldom coagulated, for which circumstance several reasons may be assigned. The haemorrhage is generally so violent that it supervenes speedily, and these extensive haemorrhages are commonly connected with a fluid state of the blood, diminishing its tendency to coagulation, and disposing it to pass off more freely by the exhalants, as in scurvy, purpura, &c. The mass, too, of the extravasation may render coagulation less active than in the circumscribed effusions. However, this of itself would probably signify but little, as, in the large extravasations following injuries of the lung, we find more or less coagulation take place readily enough.

As an example of this form of pulmonary apoplexy, we may mention a case which occurred under the notice of Dr. Townsend, in the Hardwicke Fever Hospital. A young, delicate-looking man, in an advanced stage of fever, stooping out of bed to take up his spitting-pot, lost all consciousness and fell on the floor. He remained insensible for some minutes, threw up a large quantity of blood, then recovered so far as to ask for water, which he drank with avidity, again relapsed into apparent insensibility, and died within an hour, after discharging a quantity of blood from his mouth and nose. On dissection, eighteen hours after death, all the air-passages, from the mouth to the lungs, were filled with dark fluid blood. The middle and lower lobes of the right lung were externally of an uniform deep red colour,

and, when pressed under the fingers, conveyed a distinct sense of fluctuation. When cut into, a quantity of fluid blood rushed out, with grumous clots, and several masses of broken-down pulmonary tissue. The interior of the lung presented a shreddy appearance, and resembled sponge, steeped to saturation in blood.

Dr. Townsend has only been able to discover four recorded cases, in which the haemorrhage burst through the pulmonary pleura. The first is related by Corvisart (*Commentaires sur la Traité de la Percussion*) ; the second by M. Bagh, in the *Révue Médicale*; the third by Andral (*Clinique Médicale*) ; the fourth, being the most circumstantial, we shall extract in Dr. Townsend's words.

" The fourth and last case of this description on record is that recently published by Dr. J. C Ferguson, in the first volume of the *Dublin Medical Transactions*. A robust man, æt. 36, who had occasionally suffered from attacks of constipation and bronchitis, complained, on the 19th of June, 1822, that his cough was increased, his chest somewhat oppressed, and his expectoration, since the day preceding, slightly tinged with blood ; his countenance was pale, his pulse about 90, and feeble, and his skin covered with a cold clammy perspiration. On the next day he felt relieved by the operation of a purgative. During the succeeding night he was rather restless ; however he ate his breakfast as usual, and while in the act of stooping to put on his shoes, he complained to his wife of loss of vision, seemed to faint, and died without a struggle. Examination made forty-eight hours after death :—the left pleural sac contained about three quarts of blood, the serum supernatant, as in blood allowed to stand after venesection, and the clot in considerable quantity, but very soft, occupying the most dependent portion of the cavity. The lung had contracted no adhesion ; the superior lobe was one mass of the most perfect pulmonary apoplexy, the structure of the lung seeming to be actually broken up by the excessive effusion of blood into it ; the apoplectic mass was soft and flabby ; it would scarcely bear to be incised, but broke down easily under the finger or scalpel. On the superior and posterior part of the affected lobe a laceration of the investing pleura was found, about one inch in length and half an inch in breadth, with very irregular edges, and immediately over the point where the sanguineous effusion into the substance of the lung seemed most intense, and where we might naturally expect the greatest violence to be opposed to its serous covering. A remarkable fact in the history of this case was, that he had expectorated no blood for fourteen hours before death, nor in the agony was there any escape of blood from the mouth or nares which might lead to a suspicion of the real seat of the disease. The same remark is also applicable to the preceding cases, Nos. 1 and 2, in which no haemoptysis whatever took place before death, and the cause of the fatal catastrophe was only discovered on dissection." 137.

The etiology of the disease is rather conjectural than positive ; we must pass it by. The study of the causes is of more urgent importance. The occasional causes are in general the same as those of haemoptysis, suppression of discharges, plethora, &c. But ordinary haemoptysis is more frequently dependent on tubercles, pulmonary apoplexy on organic disease of the heart, a distinction of paramount importance. Of twenty-two cases of pulmonary apoplexy examined by Dr. Townsend after death, fifteen were those of individuals labouring under disease of the heart ; two were connected with tubercles of the lungs ; one with external injury ; and, in four, no organic disease of heart or lung, nor other obvious cause, was discovered. We might enumerate many authors who have pointed out the connexion between pulmonary apoplexy and cardiac disease, but the fact is sufficiently certain.

The remarks made by Bertin are so reasonable in themselves, and square so well with what we have personally witnessed, that we cannot refrain from quoting Dr. T.'s short account of them.

"According to this author, hypertrophy of the right ventricle has the same tendency to produce apoplexy of the lung, that hypertrophy of the left has to cause apoplexy of the brain, and by the same mechanism; for as the brain directly receives the shock of the column of blood which is propelled by the aorta through the left ventricle, so the lungs receive directly the shock of blood which is propelled through the pulmonary artery by the right ventricle. Accordingly, when the parieties of the right ventricle acquire an increased volume and proportionate increase of energy in their contractions, the blood is propelled through the pulmonary vessels with such an increased degree of force as is sometimes sufficient to over-distend and rupture their parietes. The hemorrhage produced in this way he considers to be of an active character, and essentially different from the passive hemorrhage which results from the over-distention and rupture of the pulmonary capillaries, arising from the mechanical congestion of the lung caused by narrowing of the left auriculo-ventricular orifice. Of all diseases of the heart, these have the strongest tendency to produce attacks of pulmonary apoplexy, in consequence of the direct influence they exert over the pulmonary circulation; but the same effect may likewise be produced by any disease of this organ which obstructs the free transmission of the blood." 138.

We have seen six or seven cases of decided pulmonary apoplexy, and several other doubtful ones. Of the former the majority, five we think, were connected with disease of the heart, and more than that with a particular form of such disease. There was contraction of the left auriculo-ventricular orifice, dilatation of the left auricle, and pulmonary vessels, and hypertrophy with dilatation of the right ventricle. Under such circumstances, the occurrence of pulmonary apoplexy is neither surprising nor difficult of explanation; the rationale indeed is obvious. In one of M. Cruveilhier's cases the same complication existed, and M. Bertin's observations bear directly on the point. Our own cases, at least several of them, have been published in a former number of this Journal, and on the whole we do not think that Dr. Townsend has drawn so much attention as he might and should have done, to the connexion between pulmonary apoplexy and contraction of the left auriculo-ventricular opening of the heart. Dr. T. has seen two cases of pulmonary apoplexy with hypertrophy of the left and passive dilatation of the right ventricle. Many cases of the disease are met with, where undoubtedly none of the complications and causes above-mentioned are discoverable, but these are the minority, and it will be found that they are mostly of the diffuse species; that is, where sudden and violent effusions of blood occur in the lung, from what we may consider as in some measure accidental circumstances. The circumscribed extravasations, as they are of longer continuance, and frequently display the signs of different degrees of age, so they also evince a more permanent, organic, and constantly acting cause. These, at least, are the conclusions to which the facts seem to us to lead, although we should be far from dogmatising on the subject; there is much yet to be learned.

"The diagnosis of pulmonary apoplexy is, in many cases, a matter of considerable difficulty. When the patient dies suddenly without haemoptysis, as in cases No. 1 and 2 already recorded, it will often be impossible to determine, except by inspection, whether death was caused by cerebral or pulmonary apoplexy, or by

rupture of the heart: and even in those cases where the fatal attack is accompanied with haemoptysis, the physician will sometimes find considerable difficulty in ascertaining the source of the haemorrhage, as the bursting of an aneurismal sac into the bronchia may produce effects precisely similar. In the more common and less violent forms of the disease, in which an accurate diagnosis is of much more practical importance, the symptoms most pathognomonic, as enumerated by Laennec, are, violent sense of oppression in the chest; great difficulty of breathing; cough, accompanied with irritation of the larynx, and sometimes by very acute pain of the chest; expectoration of bright and frothy, or black and clotted blood, quite pure, or mixed with saliva or mucus; frequent full pulse, with a particular kind of vibration even when soft or weak, as it frequently is after a day or two. There is rarely any positive fever, and the heat of the skin continues natural, or nearly so; frequently the heart and arteries yield the bellows sound to a very marked degree. Of all these symptoms the spitting of blood is the most constant and most severe, and returns by fits, accompanied with cough, oppression, anxiety, intense redness or extreme paleness of the face, and coldness of the extremities. When the hemorrhage is very great, it comes on sometimes with a very moderate degree of cough, accompanied by a convulsive elevation of the diaphragm, like that which takes place in vomiting." 139.

But of these symptoms none are constantly present, and none are therefore pathognomonic. Haemoptysis certainly is not, for of the cases which we witnessed, it was not distinctly present in any, and the remark is a general one. Laennec observes that the slighter cases of haemoptysis depend on a simple exhalation from the bronchia, whilst those of violent and extreme haemorrhage almost invariably proceed from the vesicular structure of the lung. This must be taken with reservation, and it would require a careful survey of the particulars of all the cases known, to make any sound or fair calculation of the value of haemoptysis as an evidence of the existence of pulmonary apoplexy. But do physical signs afford any certain indications? We know from experience that they do not, and although they may assist in forming a judgment or confirming one, they are by no means adequate of themselves to lead to certain diagnosis. Auscultation has suffered more from its friends than from its enemies. The physical signs are as follow:—

"These signs are dulness of sound in that part of the chest which corresponds with the seat of the disease, and the total absence of all respiratory murmur in the same circumscribed space, together with a crepitating râle around this space; this râle which here indicates a slight infiltration of blood, is always found at the commencement of the disease, but is frequently wanting in the latter stages. When these signs co-exist with pulmonary hemorrhage, we may be assured that the seat of the hemorrhage is in the substance of the lung, and not simply in the bronchia. Besides these, which may be considered as the pathognomonic signs of pulmonary apoplexy, there is likewise, especially at the root of the lungs where the larger bronchia are situated, a mucous râle with bubbles, which seem to be large and thin, and formed by a matter more liquid than mucus; they also burst more frequently, and with a peculiarity of sound which cannot be mistaken. As the most common seat of this disease is in the central parts of the lower lobe, or towards the middle and posterior part of the lungs, it is consequently on the posterior and inferior part of the chest, that we ought to search for them with the stethoscope." 139.

The large extravasations are more likely to be recognized than the small, if the patient's demise is not too rapid to allow of accurate examination. The danger to be apprehended obviously depends on the causes of the he-

morrhage, the quantity, and the patient's previous condition. On these points we need not dwell. Laennec regards the resolution of hæmoptoic engorgement as taking place with facility, whatever may be its severity, and describes the anatomical characters of the extravasations in their progress to this state. M. Bouillaud relates a case, in which a clot of pulmonary apoplexy was seen surrounded by a well-organized cyst. Andral conceives that the clot may become organized, and form a nidus for different morbid productions, tubercle, melanosis, pus, &c. This is rather speculation than proven fact, and so we leave it. It is more consistent with what is often seen and satisfactorily known, to believe that pulmonary apoplexy may lead to the death of the part, which is choked, as it were, with blood, and to its consequent sloughing. It is sufficient, however, to point out this result.

On the treatment of the disease we need say little. It is commonly but a symptom, at all events a consequence or concomitant, of other diseases of a serious character. As a symptom, it must be treated like hæmoptysis, with more caution, perhaps, but on the same principles. As an attendant on other diseases, those morbid states or actions must be distinguished first, and then encountered on the principles and practice which always guide us. Further than this, we really conceive that nothing need be said. To enter on the special treatment of pulmonary apoplexy, would be to enter on the treatment of hæmoptysis, which is foreign to our purpose. We all know the powers of general bleeding in the latter.

The DISEASES of ARTISANS, by Dr. Darwall, are very fully considered, and the Doctor, besides his local knowledge of the subject, has consulted the best authorities. We are unable to do more than allude to and commend the article.

ASCITES is by the same author : and is not much developed. But abdominal dropsy is so rarely an original disease, that its consideration comes more properly under other heads.

We have already made extracts from Dr. Roget, who writes the article Asphyxia with his usual talent.

ASTHMA and AUSCULTATION are by Dr. Forbes, and are, as usual, much more extended, proportionally, than the other subjects. Either Dr. F. should condense, or his collaborateurs should dilate, else the writings of one author will weigh down a dozen of the others. It is difficult, or perhaps impossible, to adjust these things with much nicety ; but we suspect that our talented friend, Dr. Forbes, is rather small in the organ of concentrativeness. His matter is always good—but many words might be spared without loss. In no kind of work can diffuseness be so well spared as in a Cyclopædia of Medicine. The following extract is interesting.

" There are several forms of spasmodic stricture of the upper portion of the air-tube, more particularly of the glottis, well known to practical physicians. The more common of these occur in infants and young children ; but they are confined to no particular period of life. An old lady, a friend of the writer of this article, has all her life been liable to attacks of this kind, which seize her instantaneously, after long intervals, and, during their continuance, entirely prevent inspiration, and thus threaten immediate death. After a few seconds the

paroxysm subsides, without leaving a trace behind it. The disease described by Dr. John Clarke as a 'peculiar species of convulsion in infant children,' and of which a more complete account has recently been published by Dr. Marsh,* is evidently a spasmodic affection of the same kind, but less strictly confined to the glottis than in the case just mentioned. In the infantile disorder, the spasmodic disposition frequently extends over the whole muscular system, inducing general convulsions. The disease frequently termed *spasmodic croup*, and which occurs also most commonly in children, but at a somewhat later period, consists, in like manner, in numerous instances, in a spasmodic affection of the glottis; but, in this case likewise, the spasms frequently extend further, in many instances affecting the greater part of the air-tubes. When this is the case, the disease is in truth a form of asthma, and ought rather to be named infantile asthma than spasmodic croup. A few practical writers represent the common form of asthma, in adults, as consisting almost exclusively of spasm of the same parts; and, among others, Dr. Wilson Philip. 'The spasmodic asthma (says this author, in his recent work,) appears, properly speaking, not to be a disease of the lungs themselves, but of the parts of the upper extremity of the windpipe, in which the contraction of the passage of the air, by spasm of its muscles, produces the violent struggling for breath which attends its paroxysms.' We shall examine the validity of this opinion after having noticed the other theories. The chief of these is that which represents the asthmatic paroxysm as consisting in a spasm of the external muscles of respiration.

One would imagine that it could be no very difficult matter to determine, after an inspection of the naked chest of a patient in a fit of asthma, whether the external respiratory muscles were in a state of spasm or not: and we cannot help suspecting that some of those who have been the strongest advocates for the affirmative of this proposition, have taken but little trouble to ascertain its truth in the most natural and simple way. Our own observations have invariably led to the conclusion that all the muscles of which the action is perceptible, are, during the paroxysm, exerting themselves strongly to *dilate* the chest; and there are the strongest reasons for believing that the muscles, the action of which is concealed, are in the same condition. It is universally admitted that expiration is, in ordinary cases, effected, in a great measure, by the mere mechanical sinking of the walls of the chest, upon the cessation of the active muscular efforts of inspiration. The ribs descend and the diaphragm ascends, and necessarily, upon the relaxation of the muscular fibres, the contraction of which had enlarged the cavity of the chest. And if we take into consideration the immense superiority of power of the muscles of inspiration, and remember that these are all, during the paroxysm, exerting themselves to the utmost to dilate the chest, it seems extremely improbable that the power of their feeble antagonists, however exerted, could resist them.

But independently of these negative proofs, we have many direct ones that the principal site of the spasm is in the air-passages, and that the instinctive and voluntary efforts of the muscles of inspiration are almost exclusively directed to overcome this. Some of these direct proofs are the following. Asthma, as we shall soon see more particularly, is very commonly dependent on a diseased state of the bronchial membrane, and the attacks are frequently induced by an increase of this state. The resolution of a paroxysm is almost invariably accompanied by a great increase of secretion from the bronchi, which could hardly be expected to be the case if the affection were seated either in the muscles of the glottis, or in the *external* muscles of respiration. Diseases of the bronchi, which produce a similar contraction of the air-passages by mere swelling of the membrane, namely bronchitis, and an affection producing nearly the same physical

* Dublin Hosp. Reports, vol. v. p. 600.

condition of the parts from a sudden congestion of the blood-vessels, give rise to a state of respiration very like that which obtains in the asthmatic paroxysm. Auscultation of the respiration, during the paroxysm, discovers particular sounds over the whole extent of the chest, which sounds can only have their site in the bronchial tubes; and as these sounds come on and go off with the paroxysm, it seems a necessary conclusion that they depend on the physical changes produced by this, and that those changes take place in the bronchi. Common wheezing, as heard by the unassisted ear in asthma and in most cases of dyspnoea, may exist in a very marked degree without the auscultatory rhoncus, which may be considered the pathognomonic sign of bronchial infarction from whatever cause derived.

But while, for these reasons, we think it must be allowed that the main site of the spasms which constitute the asthmatic paroxysm is the bronchi, we are by no means of opinion that they are exclusively confined to these. On the contrary, we think it very certain that not only all the parts already mentioned, but others still more remote, are frequently involved in the same disordered action. This is what must have been anticipated from a consideration of the very nature of the affection. In all spasmoid diseases there is a disposition towards extension of the spasm from the original or principal site, and, indeed, this fact is perhaps more easily explained on physiological principles than the restriction of the spasm to one part or one set of muscles could be. In all these cases, if the nervous centres are not primarily affected, they invariably become so subsequently; and the circumscription of the local manifestation of the spasm to the muscles first disordered thence becomes very improbable. Besides, we know that muscles whose actions are at all associated, are very liable to suffer generally when one or more of the class are morbidly affected. And, in the present case, we admit that the muscles both of the larynx and the chest are frequently involved in the progress of the paroxysm. They are, however, we believe, in almost every case, affected secondarily, and it is therefore impossible to subscribe to the opinions of those who wish to make them the chief site of the asthmatic spasm. Other muscular affections, of a spasmoid kind, are not uncommon in the paroxysm of asthma. The sudden calls to empty the bowels are no doubt partly owing to a morbid action of the muscles concerned in this process, although chiefly, perhaps, the consequence of the same general disorder of the nervous and vascular systems, which gives rise to the pallid and shrunk state of the surface, the flow of limpid urine, &c. In a young man, now under our care, subject for some years to periodic asthma, which generally attacks him during sleep, the first indication he has of the invasion of the paroxysm, is an involuntary spasmoid twitching of the right foot or right leg, of which he is conscious for some time before he is fully awake, and of which the increasing violence awakens him. The twitching always leaves him on his becoming fully awake, but he then finds himself under the full dominion of his asthma.

It must not be imagined from any thing that has been stated, that we consider the asthmatic paroxysm as consisting exclusively of a muscular spasm of parts otherwise healthy. This, indeed, may be the case in a few instances; but it is not to be doubted that, in the great majority of cases, the spasm not merely affects parts previously diseased, but that the phenomena of the paroxysm are partly dependent on, and greatly modified by, these very lesions co-existing with the spasm, aggravating it, and, in turn, being aggravated by it." 188.

We must now close our notice of the first two numbers of this work. We have little doubt that the Cyclopædia of Practical Medicine will prove to be far superior to any thing of the kind which has yet appeared on this side of the Channel, though it may not equal some of the dictionaries of medicine in France. The reason is obvious. In France, the very first practitioners engage in such undertakings. In England, the prime actors in the medical

drama are to much engaged in making money to attend to any literary concern in the way of joint-stock company. But, though the greatest names may not appear on the title-page, the work may be better than if they did.

XI.

A TREATISE ON SURGICAL ANATOMY; OR THE ANATOMY OF REGIONS, CONSIDERED IN ITS RELATIONS WITH SURGERY, ILLUSTRATED BY PLATES, REPRESENTING THE DIFFERENT REGIONS OF THE BODY. By *Alf. A. L. M. Velpeau*, M.D.P. Agrégé Stagiaire to the Faculty of Medicine of Paris, &c. In Two Volumes. Translated from the French, with additional Notes, by *John W. Sterling*, M.D. M.R.C.S.L. &c. &c. &c. Pp. 456, 523. Octavo, New York, 1830.

We have just received this translation, and have not had an opportunity of seeing the original work, published in the French language by M. Velpeau. Its size and nature will prevent our attempting any thing like an analysis or review, but we think it due to the indefatigable author, and indeed to the public, to put them in possession of the objects and general character of the volumes. Nothing of the kind has hitherto been tried on a comprehensive plan, though detached descriptions of the surgical anatomy of particular systems and parts, have been published at intervals and received with much favour by professional students. As instances of this, we may refer to the work of Mr. Harrison, of Dublin, upon the arteries, of Allan Burns upon the head and neck, of Dr. Colles on the thorax, abdomen, and pelvis. It was the same abroad, and though many French surgeons had projected works of the present description, and some had even delivered lectures wearing all its features, none have yet given their systems to the public, with the exception of our present author. The differences between general, special or descriptive, and surgical anatomy are well pointed out by M. Velpeau in his preface.

" To examine the organic systems and whatever they possess in common in every part of the body, is the object of general anatomy; to study the apparatuses in succession; to describe the figure, volume, position, density and composition of each organ is the province of descriptive or special anatomy; to take a certain portion of the economy, describe all the elements which are comprised within it, and point out the peculiarities which each of them present; the direction and exact relations of the most important objects; the varieties of thickness and position produced by diseases or aberrations of development; to proceed from the skin towards the bones, or from the bones towards the surface, and thus observe successively, and layer by layer, in their relative and natural position, the different parts, without entering into minute details; this is what constitutes the anatomy of regions or of relations, or topographical anatomy.

The first, more particularly concerned with the fibrillary arrangement, and the analysis of the intimate structure of the tissues, is the basis of all sound physiology; without it, medicine would never have emerged from that confusion

of principles which so long prevailed in the schools: it truly deserves the title of medical anatomy.

The second, displaying the organs in the manner which nature presents them, describing their most prominent characters, without investigating their molecular disposition, or those unknown vital properties from which they derive life and motion, appertains, more directly to surgery, which owes to it its rapid progress and the certainty with which it is honoured; without it, the surgeon would be but a dangerous man.

The third is as yet altogether new, and can only be considered as a complement of the two others. It differs from common descriptive anatomy, both by the end which it proposes and the means it employs. This takes up one apparatus of organs and follows it to every part to which it is distributed, previous to taking up the consideration of the others; that, on the contrary, passes in review all the elements of a circumscribed point, without investigating either their origin or termination. The one tends to make known the special functions of the economy; the other to expose the different characters of this or that part of the body; to give the mechanical reason for the diverse phenomena which we remark in it; to explain the difference in the dangers and forms of diseases, by the difference in the relative and visible disposition of the systems which compose this or that region; it dwells upon some organs, passes lightly over others, always seeks to place itself in relation with operations; in a word, it is the anatomy which is most intimately connected with external pathology, and which, for this reason, is called *Surgical.*" vi.

The objects of the author cannot be more briefly stated than they are by himself in the latter part of the Preface.

" I have had no intention of making a treatise on anatomy to supply the place of those which we already possess, nor a book of surgery nor of operations, but to collect in each point of the body of man the knowledge which naturally flows from the parts which we there meet with: to propose an anatomy, by the aid of which the surgeon may always foresee, previous to practising any operation whatsoever, all the accidents which may immediately follow it, and all the precautions which it requires relatively to the parts which should be preserved or avoided; by the aid of which, one point of the body being given, it will be possible to tell, within a few lines, what are the fibrillæ, arteries, veins, nerves, muscles, etc., which must lie in the way of the instrument; and it was with the view of accomplishing this end still more effectually, that I was disposed to describe from the central point to the periphery, upon sections made at different heights of the trunk and extremities, all the objects which present themselves to the eye. I was also inclined to traverse the body in a great number of directions and at different points, with metallic rods, in order to indicate, by leaving them in place, the nature and situation of the organs thus transfixed; but I was apprehensive of making the work too voluminous, and therefore have reserved this project until a future opportunity." xiv.

If these promises are kept, and the student presented with what they give him reason to expect, we need hardly say that the work is calculated to be highly beneficial to the science of surgery. We cannot pretend, of course, to read with care a thousand pages in order to pronounce a critical opinion on the merits of an anatomical treatise; this would be imposing too hard a burthen even on a reviewer. But in France, where there has been more time, and probably sufficient inclination, to criticise, certain objections have been urged against the execution, which appear to us to be not only candidly but also satisfactorily answered by M. Velpeau, in the preface to his

second volume, published it would seem, at a period subsequent to the first. The objections are stated and met seriatim.

" 1st. Some persons, whilst they praise the general distribution of the work, have objected that, in order to understand it, a knowledge of anatomy is necessary, and consequently, that it is not suited to students commencing the study of medicine. To this I reply that my intention was not to take the place of other treatises on anatomy, nor to make a book for those who have not yet acquired some knowledge of the organization of man; but that the surgeon might, by studying successively the different sections which I have established, obtain as exact and perhaps more positive information than by any other method.

2nd. Others, on the contrary, consider that I have erred in describing all the parts of the body, because a great number of them present but little surgical interest. This censure does not appear to me to be just. Indeed it was either necessary to make a complete treatise, or none at all. Now, in the first case, all the regions must necessarily be passed in review, the one after the other; and besides, is there one of them upon which we may not be called to perform some operations?

3d. Some have found the work too voluminous; and one asserts that I have dwelt too long upon surgical considerations, or pathological observations, whilst another says that I have insisted too much upon anatomical detail. Such censures annul one another, and I must confess that they have surprised me, in every way. In the first place, I dare affirm that it is impossible to treat the same subject in a single volume, without doing it superficially; unless we imitate those who make it their business to transform every good book into simple manuals; as if every one was endowed like Hippocrates, Boerhaave, Stoll, with the capability of reducing any part of medicine whatsoever to a few aphoristic sentences! Has not Burns published an entire volume upon the head and neck only? Those who read my production with some attention will be convinced, if I do not deceive myself, that I have not dwelt upon anatomical descriptions, except when it became necessary in order to explain certain methods of operation, some morbid phenomena, or when the parts did not seem to have been presented under their proper aspect. On the other hand, I beg leave to remark that the principal object of this work is to illustrate the practice of operations; consequently, I could not dispense with discussing the relative value of operatory processes founded upon the anatomical disposition of the parts.

4th. I am also censured for not having described more fully the external configuration, or picturesque anatomy. I admit that it would have been possible to have entered more into detail on this subject; but writing for surgeons rather than for painters, I was apprehensive that I had already gone too far in this respect. It would have been very easy, however, to have filled up this void, as it is the most simple part of the subject.

5th. There are those who have supposed that the regions might have been better designated from the presence of some important organ, than by arbitrary lines. Thus, they would have preferred *sterno-mastoidean*, *carotidean*, *laryngeal*, *tracheal*, *lingual*, *tonsillar*, &c. regions. This was the method which I attempted first: it would have exacted much less labour; but I soon perceived that it would render the objects extremely vague, and that all precision would have been impossible. Besides, it would only have been tracing the steps of *Winslow* and of *Malacarne*, and would have produced a work quite as useless as that of the latter author.

Furthermore, this plan seems to me to deviate too much from the rigid accuracy which ought to characterize surgical anatomy, for any one to adopt it, and I may therefore dispense with exposing the defects of it.

Finally, all these objections relate to the method only, and I observe with satisfaction that none have as yet been raised against the correctness of the des-

criptions or the judiciousness of the practical applications, which must essentially constitute the fundamental part of the work." vii.

The first volume contains the surgical anatomy of the head—neck—thoracic extremities—chest. As a specimen of the mode of subdivision, we may take the first chapter, that on the head. This is split into two articles ; —1. On the Cranium—2. On the Face. Each of these parts is again subdivided into regions; the head into the frontal region—temporo-parietal region—occipital region—cranium in general; the face into the parotideal region—nasal region—orbitary region—zygomato-maxillary region—maseteric region—genial region—mental region—labial region, comprising the superior and inferior lips—olfactory region—buccal cavity or region—parts constituting the tongue—pharyngeal region or cavity. Each of the regions again is treated of in reference to its "constituent parts," arranged in the following order. This is the frontal region.

1. The Skin.
2. The Cellulo-adipose Layer.
3. The Muscles and Aponeurosis.
4. The Pericranium.
5. The Arteries.
6. The Veins.
7. The Lymphatic Vessels.
8. The Nerves.
9. The Skeleton.

From this it will be seen that the plan is comprehensive, the details minute. The author promises scrupulous accuracy, having first consulted nature and drawn up his own observations, then compared them with those of authors of eminence, accepted them forthwith if they agreed, and if they did not, having again referred to nature to settle the dispute. This is the best way of arriving at accuracy that we know of.

With regard to the execution we can only say that from the little that we have seen of the volumes, we should pronounce a very favourable opinion. We shall select a specimen, not that it is the best, but that others, of more value, are too long for extraction.

"The Isthmus of the Throat."

This opening is formed, inferiorly, by the dorsal surface of the tongue; superiorly, by the velum and velum pendulum palati; and laterally, by the pillars of the velum.

The velum palati is a prolongation of all the soft tissues of the superior paries of the mouth and inferior of the nasal fossæ, and also includes a certain number of muscles which determine its movements. We consequently find in it, in the first place, a thick, slightly extensible, and lacerable mucous membrane, which is generally of a deeper colour than that of the interior of the nose and mouth, and lined by a layer of filamentous and dense cellular tissue, in which there are a great number of very large follicles; next, another lamellated membrane, which unites the latter to the muscles. It is in the first of these tissues that purulent and œdematos infiltrations, etc. are developed, and these are the follicles which appear to be the principal seat of disease in the various affections of the velum palati. In these laminæ the principal nerves and vessels ramify; but they are unimportant in a surgical point of view. It is proper to observe, however, that it is very liberally supplied with venous capillaries; which perhaps will enable us to explain the prompt and beneficial results which some surgeons

derive from touching the mucous membrane with the nitrate of silver in certain inflammations.

A man was suddenly attacked with a very acute pain in the upper part of the mouth, and, on inspection, we perceived a reddish blue spot, of the size of a two franc piece, upon the anterior surface of the velum palati, the rest of the throat being in its natural state. We touched this spot with the nitrate of silver : one hour afterwards the pain had ceased, and on the day following the redness had disappeared.

Next, the muscles : these are, the levatores palati, which draw the velum towards the nasal fossæ ; the tensores palati, which widen it by drawing it horizontally, in consequence of their being reflected over the hook of the pterygoid process, forming a pulley ; the palato-pharyngæus and constrictor isthmi fau-
cium, which depress it towards the base of the tongue ; lastly, the levator uvulae, which appertains especially to the uvula. As all these muscles, with the exception of the azygos uvulae, lie upon the sides, we may easily explain how the separation which exists between the two halves of the velum palati, when this organ is divided, is produced ; but it is not so easy to account for their spontaneous approximation, in some convulsive actions of the pharynx, as is frequently observed, for example, when the *staphyloraphy* is performed. We had an opportunity of observing this phenomenon very distinctly, in a female operated upon in June by M. Roux. We in fact saw, and M. Roux directed our attention to it several times, the two lips of the division pass towards each other and come into contact, whilst this skilful surgeon was attempting to lay hold of them with the forceps or tenaculum. This fact is not satisfactorily explained to us by the known laws of muscular contraction.

The velum, like the vault of the palate, seems to be formed by the approximation of the two lateral parts. Now, if this approximation is not effected, a congenital division will be the result, which may exist alone, and thus form a species of hare-lip in the back part of the mouth ; or it may be accompanied with a more or less extensive separation of the palatine suture, which being prolonged forwards, may coincide with a single or double hare-lip. It is for the purpose of removing this infirmity, heretofore considered as incurable, that M. Roux invented the *staphyloraphy*. This operation, simple and easy in itself, but delicate and tedious on account of the depth of the organs upon which it is necessary to act, has already been performed by the celebrated surgeon of *la Charité* about twenty times ; and if not always with complete success, at least with a sensible amelioration in such cases as would not admit of a perfect re-union. At first view, we might apprehend that the sutures would cut through the soft parts which they must embrace ; but observation has shown that this does not happen ; and this may be accounted for by the compact texture of the mucous membrane, and especially of its cellular tissue, which is almost fibrous ; by that of the circumflexus palati, which becomes aponeurotic in this situation ; and lastly, by that of the azygos uvulae, the entire body of which is comprised within the loop of the ligature. When the attachment of the velum palati to the posterior margin of the vault participates in the malformation, it may hinder the re-union of the soft parts : in such a case, M. Roux makes a transverse incision, and separates this membrane on each side, by carrying it along the posterior border of the floor of the nostrils ; after which there is no obstacle to the approximation of the scarified edges of the wound. This operation is, without contradiction, one of the most brilliant conquests of the surgery of the nineteenth century.

The free margin of the velum palati is prolonged in its middle by a conical eminence, the length of which varies considerably. This small body which is indirectly attached to the posterior spine of the nasal fossæ, is called uvula, and does not exist in animals, unless it is the ape, in which it is very small. It contains the same elements as the velum palati, and its figure is moulded upon the azygos uvulae muscle, which retracts and partly elevates it. The mucous mem-

brane forms the greater portion of it; indeed, with the follicles, it constitutes the whole of the inferior half of its free portion. These follicles are so large and numerous that they form a thick layer which gives to the uvula a very distinct glandular appearance. M. Lisfranc says that there are three in particular at the extremity of this organ, which are very large. It is to their swelling, to the inflammation of the cellular tissue which envelops them, or to serous effusions into the laminae of the mucous membrane, that what is vulgarly called the falling down of the palate is to be attributed. Of whatsoever nature this elongation may be, it occasions much inconvenience, and a troublesome cough, in consequence of the irritation which it keeps up in the throat by titillating the tongue. In all these cases, if it is not indurated, or of very long standing, cauterizing it with the nitrate of silver will seldom fail to cure. But should this means prove unsuccessful, we must resort to excision as the only resource which holds out a chance of success. For this purpose the scissors invented by Percy, having one of its blades a little longer than the other, and bent towards the end transversely, so as to prevent the organ slipping from between the blades, are very serviceable; or we may seize the end of the uvula with a hook or forceps, and then snip it off with a blunt pair of scissors. When the tumefaction of the uvula is very great, the greater part of it may be removed without inconvenience. Surgeons have frequently supposed that they have cut it off at its root, when only that portion of it which is below the azygos was actually removed, and the congestion of the tissues being relieved by the operation, they resume their regular position; and the uvula then appearing almost of its natural length, some have supposed that it was regenerated.

Upon each side of the uvula, the border of the velum palati forms an arch which bifurcates in descending, in order to form the pillars, and thus constitute the lateral parts of the pharyngeal isthmus. The anterior branch or pillar includes the glosso-pharyngeus muscle and is lost upon the side of the tongue; the posterior descends into the lateral paries of the pharynx, and seems to go to attach itself to the body of the os hyoides: this encloses the palato-pharyngæus muscle. These two pillars consequently leave between them a triangular space, the base of which is below, and in which the tonsils are situated. These last organs are composed of a great number of mucous follicles, intimately adherent to the mucous membrane, which also sends numerous processes between them, uniting them to each other. The amygdalæ are subject to two species of inflammation; that is to say, the inflammatory state may be developed in the surface of the mucous tissue, which generally produces factitious membranes of different species, which may be mistaken for ulcers and even gangrene; or the inter-follicular and sub-mucous cellular tissue may be the principal seat of the inflammation. In the latter case, phlegmonous abscesses are disposed to form, and when they frequently recur they may occasion induration. As the use of the knife is frequently required in inflammations of the tonsils and their consequences, it is necessary to know the exact relations of this gland, especially its external part. It is, in fact, in this situation that it is approximated to the internal carotid artery, from which it is separated, in the natural state, only by the constrictor of the pharynx, some cellular tissue, nervous filaments and a complicated venous plexus. In general, the artery is eight or ten lines behind and external to the gland; so that in plunging the bistoury between the pillars of the velum palati, it would be easier to strike this vessel when the tonsil is in a state of tumefaction, as it is then carried near to the artery. In order to avoid this terrible accident, which must almost inevitably be mortal, it would be better to direct the point of the instrument more towards the pharynx, than towards the ramus of the jaw. Notwithstanding Burns relates one example, M. Portal a second, and Béclard a third, this accident must be very rare, and can only happen to those who, by distraction or some other cause, have entirely forgotten the anatomy of the posterior fauces. In the extirpation of this gland when scirrhou-

there is still less risk, because the organ being drawn forwards by the forceps, it is scarcely possible, in cutting it out with the scissors or bistoury, to dip so deep as the artery. But it must not be forgotten that, during this operation, the velum palati, the pillars and tongue are alternately elevated and depressed, so that the gland appears prominent at one moment and at the next depressed: hence the advantage of using the scissors, for although the probe-pointed bistoury may be conducted by a dextrous hand, it will be liable to wound other organs unnecessarily. The haemorrhage which follows this operation is sometimes considerable, and proceeds from the very complex net-work which is formed in the tonsil by the superior and inferior palatine arteries, and to the tonsillary circle which results from their anastomoses being of considerable volume. But more frequently the blood is discharged from numerous large veins, which form a species of plexus externally and against the posterior wall of the pharynx.

It is in the same depression in which the tonsils are lodged, and upon the tonsils themselves, that syphilitic ulcers of the throat are generally developed; it is also upon these organs that croupal concretions begin to form in the greater proportion of such cases; therefore these parts should be closely inspected when we have the least suspicion of these diseases." 128.

We need hardly say that we recommend the work to the attention of the profession.

XII.

ETIOLOGY OF THE REIGNING EPIDEMIC.

FACTS REGARDING THE REMOTE CAUSE OF THE EPIDEMIC CHOLERA.

- 1. Orton's Theory of Cholera.
 - 2. Topographical Facts on Cholera, by the French Embassy in Russia.
 - 3. Volta's Experiments on the Nature of Malaria.
 - 4. O'Shaugnessy and Clanny's Analyses of the Blood in Cholera.
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FACTS REGARDING THE REMOTE CAUSE OF THE EPIDEMIC CHOLERA.

HOWEVER obscure the nature of cholera may appear; or however unsettled may be its treatment; however divided we may be in sentiment upon the identity of the present fearful epidemic with the ordinary autumnal cholera that visits this country; and however the public mind may quail and tremble under the fear of its being possessed of a virulent communicative property by which it may propagate its seminal principles from house to house, and from country to country—we believe that, with a very few and unimportant exceptions, it is universally admitted that something either dissolved in the air, or emanating from the earth, is capable of producing it. We mean not either to deny or support the doctrine of its contagious character; nor shall we attempt to explain all the facts, nor reply to all the arguments which have been adduced in favour of or against that view. But it is our desire to lay before the reader in the succeeding pages a few remarkable and important facts in reference to the *principal remote cause* of the disease termed Asiatic Cholera, which, in our estimation, go far to show that this disease originated in a malarial principle, which, in all probability is nothing more or less than some gazeous fluid generated beneath the surface of the earth during the various processes of decomposition of vegetable substances.

After the thousand and one theories that have been started upon this subject, and have been consigned to annihilation, it may be hazardous to attempt any thing like novelty; but as we ground our opinion upon facts, and as these facts are so decisive as to lead, in our estimation, to one inference only, we hope to be excused for an opinion which the reader's own judgment may be voluntarily led to by a single perusal of the facts and statements upon which this opinion has been originally formed.

1. *Orton's Theory of Cholera.*

Great praise is due to Mr. Orton for the highly valuable collection of topographical and meteorological observations in regard to their influence on the manifestation of cholera in India. It is however surprising to see him taking into consideration for the remote cause of epidemics in general, and of cholera in particular, either the disordered state of the atmosphere, or sol-lunar influence; nay, that even of localities on the prevalence of the epidemic, and overlook or misinterpret so many important facts in support of an objectionable and quite fanciful hypothesis, which can never be either proved, or properly sustained, by philosophical reasoning.

He remarks, very properly, that as we do not see any particular set of functions peculiarly affected in cholera, we can not suppose that its proximate cause is to be ascribed to any particular organic lesion. The sudden defection of all powers of life requires no other cause but one of the most general agency throughout the frame to account for those circumstances. "It is an established position, (says he,) that the cold stage of intermittent fever is owing to diminished energy of the brain or nervous system; and in that affection we find nearly the whole of the principal symptoms of cholera, in a minor degree, and *scarcely any other.*" From these views he concludes, that the prime cause of cholera consists in a diminution of the energy of the nervous system, which extends in various degrees to all the functions, and immediately produces the phenomena of the disease. On this hypothesis, he endeavours to explain all the symptoms of cholera, according to their manifestation in the different sets of functions of the human frame. This being accomplished, he comes to the investigation of the remote cause of epidemics in general. "Epidemics (says he) depend generally on some disordered state, or states of the atmosphere"—from which, it is evident, that the principal hopes of success in this inquiry into its nature must depend on ascertaining the meteorological occurrences which have accompanied the disease. A great many and valuable facts are related in the subsequent chapter, which proves that an extraordinary disorder in the state of the atmosphere has always preceded the epidemical appearance of cholera in India. From that disordered state of the atmosphere extraordinary rainy weather occurred, which originated numerous and extensive inundations from the overflowing of rivers. And so constant was this fact in connexion with the appearance of the epidemic cholera, that he concludes this chapter with the following remark. "I have not met with a *single instance* in which the disease is found, or stated to have appeared in the serene and settled weather which usually occupies so large a portion of the year in India, to such an extent as to be termed epidemical; surely its connexion with the opposite states of the atmosphere can not longer remain in the smallest degree doubtful. The observations on the state of the atmosphere in former appearances of this epidemic lead to the same conclusion. It appears, therefore, that of all the atmospheric phenomena, which have been mentioned as accompanying the disease, none are universally present, except those which indicate a diminution in the density of the air, and a *tendency to rain, and storms.*"

Here Mr. Orton leaves us on the earth and flies up to the moon; and although in the following chapter he announces for our consideration the sol-lunar influence, he seems so much satisfied with that planet alone, that he entirely forgets the sun, as though in a tropical climate, like that of India, it had but little to do in favouring the processes of decomposition and evaporation which go on so actively in that country. We, however, do not intend to follow Mr. Orton's journey, leaving those who are curious to know the numerous facts which he has collected with great patience and care to peruse at their own leisure the long chapter in which they are detailed. For our part, we must say that, in general, we found nothing else but the argument of the "*post hoc, ergo propter hoc*" in all the facts therein adduced. However, Mr. Orton says, that "on perceiving the analogy between the cold stage of fever and cholera, *he* was led to suspect that the epidemic might be influenced by the moon; and on collecting all the dates of the appearance of the disease at particular places, which were then within *his* reach, *he* found that *nearly* the whole of them had occurred within the short period of the full or change." Connecting these facts with the others related in the former chapter, on the atmospherical vicissitudes, he draws at last this conclusion. It is evident then that these two series of observations on the circumstances attending the epidemic—"coalesce, and yield one result." On these data is founded

the following axiom:—"The atmosphere during the prevalence of the epidemic is in a rarefied state, and exhibits a great tendency to part with its moisture, forming thick clouds, heavy rain, or haziness, and to become agitated by storms." "It remains to be considered how far these circumstances compose or are connected with the *great cause of the disease*."

This is the main object of the following chapter, in which the *primary cause of the epidemic* is taken into consideration. This chapter is worthy of the attentive consideration of the professional reader. "It is evident (Mr. Orton says) that any diminution in the density of the atmosphere must increase its capacity for electricity, and consequently diminish the quantity of that fluid which it possesses in a free state: and if it has been proved that a rarefaction of the air accompanies the prevalence of cholera, it follows that the disease is accompanied by a *diminution of the free electric fluid in the atmosphere*. It is this *deficiency*, produced in this and in other ways, which I consider the *great, and immediate cause of the epidemic*."

"Influenced (we may say of him what he states of Mr. Scott) too much by this prevailing opinion, which indolently shuts the door to all inquiry," he concludes this part of his work with the following leading principle—"The *deficiency of electric fluid* in the atmosphere produces a correspondent *deficiency* of that principle in the *arterial blood*; whence the nervous system is rendered incapable of separating and supplying a sufficient quantity of the '*nervo-electric fluid*' to the wants of the animal economy; and that state which has been termed '*diminution of nervous energy*,' with its infinite series of effects, is produced."

Pathologists usually divide the causes of disease into three different varieties: one is called *causa remota*, the other *causa occasionalis*, the third *causa proxima*. But in Mr. Orton's theory of cholera all these causes are so unlogically employed that one and the same cause is made at one and the same time the predisposing, remote, and immediate. His proximate cause is a *deficiency of electricity* in the arterial blood, by which a *deficiency of the nervo-electric fluid* is occasioned: his remote cause is a *deficiency of electricity* in the atmosphere; and the rain, the rapid changes of temperature, the new and full moon, &c. are considered by him as the occasional causes of this disease, which produce a *deficient state of electricity*.

To this second edition of his Essay he adds a Supplement, which indeed contains a very complete and valuable collection of many interesting and unequivocal facts, and observations on the meteorological and topographical circumstances connected with the appearances of the disease in India. The subject of the sudden and rapid changes of temperature, the heavy falls of rain, the stormy weather, &c. are taken into consideration again, and in a more extensive manner. And although he is rather now and then puzzled in explaining some striking exceptions which go against his theory, he passes over them in the best way he can, contenting himself with the question—"In what then but the change in the electrical state of the atmosphere, which so constantly attends these occurrences, and precedes their development, can the deleterious element of the general change consist?" Moreover, there is in this Supplement an important section on localities in regard to their influence in producing the disease; and here we might have expected that Mr. Orton would have turned his eyes from the heavens, and looked downwards a little upon the earth, where by chance they might have been struck by the many low and damp grounds, covered by stagnant dirty waters, by the extensive rice-fields, the banks and bogs, encumbered with jungles; or his nose might have been assailed by the odiferous effluvia arising from the putrefaction of vegetable matter; and this we might have the more reasonably expected, since he states that—"it is abundantly evident that all *malaria* countries have suffered in an especial degree from the epidemic; which further proves the identity of the great cause of fever with *one of the causes of the epidemic cholera*."

All this however is just for Mr. Orton as "*dust in the balance*"; for he informs us that "Read has found, that the *miasma* from *vegetable putrefaction* occasion *negative electricity* in the air. Is not, then, the air of marshes (where the decomposition of such vegetable matter is continually going on, particularly in hot weather) negatively electric? And is not this an approach to the solution of that celebrated medical problem, the cause of the unhealthiness of marshes?" In this way these circumstances, which might have produced, at least, some modification of his former theory, are settled to his satisfaction.

It is only at the head of this Supplement that the subject of contagion is taken into

consideration. Of this word something like a phantom is made, which wanders capriciously about, and now and then is making its appearance where there is no necessity for it, (at least as far as this disease is considered in India): at which we are not surprised, since Mr. Orton says, in another place, that "it has been *clearly shown*" that that agent alone is *totally insufficient* to account for the prevalence of epidemics." However, as he does not tell us in what degree, or to what extent this *agent* operates, nor whether it stands on the positive or negative pole of his etiological battery, we are inclined to believe that this doctrine was introduced for the purpose of rendering his work more palatable to those medical gentlemen who might have been deterred from reading it, because contagion was excluded from his catalogue of causes.

Electricity is certainly one of the strongest powers in nature. But, as the steam-engine is to be considered the power by which all the complicated machinery to which it is attached are put in action; so when we speak of the atmosphere, we must consider, that it is nothing else but an aereo-elastic fluid which is more connected with the earth than with the heavens, nay, which constitutes an identical part with it. From the earth a great many gaseous fluids arise, which ascend more or less into the atmosphere, and mixing with it contribute in many ways to change, or alter its natural constitution, from which the infinite variety of meteorological phenomena arise.

The different appearances which accompany electricity, in its positive and negative characters, are not essential differences in the simple nature of that general principle; but are only modifications produced in its mode of manifestation from the different relations in which one body stands with reference to this agent towards another. It is not surprising, then, if Read found that the air at one end of a school-room, situated over a common-sewer, was negatively electric, whilst the open air, as well as that at the other end of the room, was in the opposite state. But we are also convinced that, if Mr. Orton had been seated over an electrical stool, and under the most positive influence of a powerful electric machine, his respiration would have been equally affected, if he had been obliged to inspire at some length the mephitic air arising from that common-sewer, "which gave an ill smell;" which, we dare say, was not at all comparable to the "resinous odour" of negative electricity.

What may be the effect on the organic constitution of an individual so exposed to the influence of malaria, we do not pretend to say; leaving for Mr. Orton to apply his electrical theory, if he likes, for the proximate cause of those diseases which could originate from it. But as far as respects their remote cause, we are quite convinced that it depends entirely on some deleterious principle which has been absorbed into the system, and which has altered the natural character of the blood. We have several times bled patients under similar circumstances, and we have always found a particularly dark fluid state of the blood; even when some process of inflammation had been produced in some organ, in consequence of some particular exciting circumstances, as of long laborious work under the hot rays of a vertical sun. In such cases this blood presented a very distinct buffy coat, but it was never cupped: on the contrary, it presented an elevated, convex surface, depressed in the margins, in consequence of the slight state of coagulation of the crassamentum, which might have been very easily reduced to a fluid consistence, if mixt up a little with the copious yellow-greenish serum, by which it was surrounded. Sometimes the buffy coat consisted of a slight grey milky pellicula, which was even not quite coagulated, but resembled a milk-greasy fluid covering the surface of the crassamentum. The sedative power of these miasmata was in some cases, and in some years so great, as to render bleeding, in many instances, impracticable, and never to be performed without serious consideration. We shall never forget the case of a lad, who had a quartan ague, for which many remedies had been tried without effect. Thinking that the disease depended on chronic inflammation of the liver, which was certainly very large, we thought it proper to bleed him. His simple fever rapidly changed into the most dangerous *pernicious choleric fever*, by which he would probably have lost his life, had we not had time enough, through its long periodicity, to give bark in proper quantity. We have practiced in a district of the dukedom of Parma, which is well known for the endemic intermittent fevers from malaria. They prevailed on the eastern side, where a low, a very rich valley exists, which had been dried up by intrenching a small river that joins the river Po, which runs on the other side westwardly. When the last part of the Autumn, or the beginning of the Winter, has been very rainy; or when, at the beginning of the Summer, the snow upon the mountains, where

those rivers have their source, melts suddenly, they overflow their intrenchments; those low grounds are the most subject to be covered by water, which can only in part run away. Thus regular cultivation is prevented, and instead of bringing forth a regular productive crop, a luxuriant wild vegetation takes place, which principally consists of thick, spongy jungles, and other watery plants. Towards the commencement of the Autumn, a great quantity of water being evaporated, a slow process of decomposition takes place, which is formed by the remaining moisture, and by the powerful influence of the sun.

Towards evening a white heavy mist may be seen arising from those grounds, to some height above their surface, till with the advancing of the night it becomes less manifest or entirely disappears, when the air becomes suddenly chilly and very damp. This is the worst moment to be exposed to its influence. When the weather is very close this mist is thicker and rises higher, and its smell is stronger. After a heavy fall of rain, if the temperature becomes cool, and the weather clear and dry, (which is not always the case, as sometimes the temperature is more oppressive and suffocating after a fall of rain, and more particularly when the sky remains covered with a thin, interrupted *stratum* of white clouds,) the evaporation from the earth, the damp thick mist, and the bad smell cease entirely, or is only limited to the very spot where they originate. On the contrary, when the weather has been very dry through the Winter, when the Spring regularly increases in temperature towards the Summer, and of course when the melting of the snow has been going on slowly, these valleys remain dry and are cultivated, their power of vegetation is less luxuriant, and the jungles give place to a more useful kind of grass. Hence have we seen some years passing almost without any ague, or of a very simple, and more manageable character. The same circumstance can not be expected in the rice-fields which are always artificially overflowed by water at particular periods.

On the other side of the district near the Po, which we have just alluded to, is a dry sandy ground, covered close to the water by poplar woods. There ague does not exist, although the air is damp at night, and chilly. If any ponds are left on this ground in consequence of the overflow of the river, their water is always very clear and pure, and they never smell badly, because of the sandy character of the ground; proving that it is not the cool and chilly temperature, or the damp state of the atmosphere alone, which causes these intermittent fevers.

There are parts of Italy, and other hot countries in which intermittent fevers from malaria do not exist at all; and there often happen in the hottest part of the Summer such rapid changes of temperature in consequence of storms with heavy falls of rain, as those mentioned by Mr. Orton in India, yet no *malignant cholera* or intermittent fevers arise from them. Spasmodic complaints, indeed, may suddenly occur, nay, diarrhoea, or cholera if he likes; but how different are they both in their most important symptoms, result, and method of treatment? Every one who has lived in those countries must know by personal experience, that sleeping lightly covered in bed when a rapid change in the temperature of the atmosphere takes place in consequence of a sudden fall of rain, brings on very often severe cramps in the legs, or an attack of diarrhoea. A man slept in a field during a very hot night. He awoke in the morning with spasms of his limbs, which were followed by tetanus, from which he died. Very cold water drank when hot may produce colic, diarrhoea, or even cholera. These same complaints have been produced by stepping out of bed, and putting the naked feet upon the cold stones with which many apartments are paved in Italy. Such accidents as these may happen, and we do not pretend here to say from what cause; but who can say that these complaints are the same with the malignant cholera? So does it happen that cholera appears in certain seasons in this, or any other country, either in consequence of some rapid change in the temperature of the atmosphere, or from particularly unwholesome or indigestible food. Thus poisons, large doses of drastic purgatives, or sea-sickness, as Joseph P. Frank remarks, may produce cholera, but are these affections to be compared with the malignant cholera? The treatment by which they are generally cured is enough to indicate the difference. Opium, stimulants, warm-bath, magnesia, and other aperient medicines, blood-letting relieve the spasms, stop the diarrhoea, and vomiting; when these symptoms have subsided the disease is cured. In the malignant cholera, on the contrary, these symptoms may cease, but not the danger of the patient's life. He must very often run through another severe stage of the disease, which is the immediate consequence of the fatal effect of the sedative and

deleterious principle existing in his system, and which poisons the very source of the vital power. Those atmospherical vicissitudes may have contributed very much in India to the production of those spasmodic complaints, in conjunction with fever from malaria, but without it they would have been of a quite different character. A great many instances, we dare say, were related as malignant, which were only simple spasmodic cholera. The following quotation from J. P. Frank's *Epitome de Curandis Hom. Morb. (De Proflusis Part II. §. 674, de Cholera.)* will be found very interesting. "Majoris in medicinas artis exercitio momenti divisio est, cholerae in *apyreticam*, quæ sine febre incedit, et in *febrilem*, quæ *febris legitimæ, periodicæ, et quidem perniciosæ, plerumque tertiane, symptoma* est, ac *loco paludosa, calido sub cælo, vel maxime infesta; cum prima, ubique frequentius hoc ipsa occurrat.*"

2. Topographical Facts on Cholera by the French Embassy in Russia.*

In perusing a small pamphlet containing an official report from facts and observations on cholera morbus, collected by the French Embassy in Russia, we found, amongst other things of less importance, some topographical statements of very considerable curiosity.

"An important fact appears to be proved by the following observations: woods seem to diminish the choleric influence so much, that very woody districts situated between infected provinces have been entirely preserved from this destructive scourge."

"We have sent to Government a map of European Russia, where the progress and ravages of the cholera are marked by a dark ground, which is more or less dark according to the proportion of deaths compared with that of the inhabitants. There the disease, which is indicated by a black line, (*trait,*) may be seen making its entrance into Europe by Bakou and other points of the Caspian shores, and extending itself as clouds of smoke, more or less thick, which after having reached Tiflis and Astrakan, join together, then divide, and separating into different directions, go afterwards to ravage Russia, Austria, Poland, and Prussia. Between these clouds there are small spots left entirely white upon the map which denote the districts totally preserved from the cholera; and every thing seems to indicate that those privileged places principally owe their safety to the forests by which they are intersected and surrounded.

"But a still more decisive fact comes to sustain our opinion." Kristofsky island, situated in the middle of the populous islands of St. Petersburgh, and which communicates with them by two magnificent bridges, and, with the town by a thousand barges, which bring every day, and especially on Sundays, a great many people who go to take a walk in that charming place, Kristofsky island, we say, *has been completely preserved from the reach of the cholera;* there has not been a single patient in the three villages which it contains.

"And it is not to be supposed that the inhabitants of those villages were of a different nature from those of the town: all the abodes of this island are country-houses empty in Winter, and full of people in Summer, either noblemen, artists, or citizens of the town. During the cholera in St. Petersburgh, almost all the French players retired to Kristofsky, and not a single patient was found amongst them, while out of the small number of their companions who remained in town, many either died from the disease, or were seized with its most violent form.

"To what, then, may be ascribed the salubrity of Kristofsky, inhabited by the same people as St. Petersburgh, following the same regimen, and communicating with each other every day, if not to the influence of the superb forest which covers it? No other cause than the many neighbouring woods was found to explain its salubrity, for the island is a low and damp one, exposed every night to cold and heavy fogs, and fouled every Sunday by the excess of people who go there to gorge themselves with intoxicating liquors.

"We believe then that woods, and *probably the fir-tree more than any other*, have the property of destroying, of absorbing, or of neutralizing that *unknown cause, which generates the cholera, and which seizes the persons predisposed to it either by bad regimen or bad habits.*"

* Observations sur le Cholera-Morbus. Par l'Ambassade de France en Russie. Paris, October, 1831.

Similar observations have been made in Italy on the subject of intermittent fevers arising from the malaria of the marshy grounds. Those places most frequently subject to have agues are destitute of trees; when districts in their neighbourhood, not only well cultivated, but planted with many trees, are quite healthy. Regular plantations have been ordered by Government in some places, as Mantua for example, to improve the state of the atmosphere, and fever has since diminished in that place. It is also well known that the *selva sacra* was thought to preserve ancient Rome from the infectious influence of its bordering marshes; and was held in veneration, because in former times its destruction brought on a malignant fever amongst its citizens. Facts of a similar kind have been also remarked by Dr. Rush in North America, not only as regards intermittents, but the yellow fever.

The following facts extracted from the German papers which have been lately published, as they bear upon this point, deserve attention.

"It is a remarkable circumstance that very few cases of cholera have occurred at Baden, a watering place about ten miles from Vienna, though the whole country round it has been suffering dreadfully from the epidemics. This exception is ascribed to the vapours constantly rising from the warm springs at Baden, which are strongly impregnated with sulphur, and unite in streams, which wander through the town. The same happy exception occurred to Baden at an earlier date, and on several occasions, when the plague was raging in and about the Austrian metropolis. It was the sulphuretted carbonic acid with which the atmosphere hanging over the promontory of Baku is saturated, which protected its inhabitants from the cholera, when every other quarter on that side of the Caspian was laid waste by its virulence two years ago."

3. Volta's Experiments on the Nature of Malaria.*

These facts have recalled to our memory some curious inquiries made in Italy, in 1776, by the celebrated Volta, on the malaria arising from marshy grounds. As they may probably throw some light on this obscure subject, we consider them worthy of serious consideration.

Volta being informed that inflammable air was continually bubbling up from a particular spring, and thinking it might be produced by a slow subterranean process of decomposition of vegetable and animal remains, he imagined he could obtain the same result, where similar circumstances were present. With this preconceived idea he embraced the first opportunity of ascertaining it by facts.

Being in a boat on the Lago Maggiore, at Como, where he saw the water most muddy, he began to puddle under it with his stick, and perceiving that many bubbles of air arose instantly to the surface of the water, he collected it in bottles, and as soon as he reached home examined it. The smell alone induced him to predict to several friends, who were present, that this air would inflame if a light were approached to it. The experiment was tried, and it burnt with a tranquil bluish flame.

These inquiries were repeated in many other places, and neither pond, ditch, nor any other place where muddy and dirty water was to be found, escaped his observation. He always obtained more or less of the same result, (with one exception, where he found an air which in place of igniting instantly extinguished the flame) provided the ground underneath contained the smallest portion of vegetable substance. From a sandy and gravelled ground, over which water was flowing in a rapid stream he could not obtain any; nor was any to be procured from the mud of the public streets, or roads.

These facts having been ascertained, he began to think that the presence of water might not be a condition necessary to obtain this result provided there was enough of vegetable and animal remains which had previously been moistened by it. He then examined some ground which had been left lately flooded in the neighbourhood of the same Lago Maggiore, digging up the ground in several places, and throwing water into it, and he found that the same inflammable air was generated as in his former experiments. Even in places where there appeared no water, but in which holes were bored in the earth with a stick, an air was extricated which was inflamed by a taper and burned in the same manner as the air collected in bottles in the other experiments. "It was amusing," says Volta, "in boring quickly through the ground in several places, to see,

* Volta's Works, Vol. III. Florence, 1816.

when the air was lighted, how the flame flew rapidly from one hole to the other, gushed out from them violently, and blazed furiously, more particularly if I pressed or stepped with my feet over the ground so as to squeeze out a greater quantity of air." These experiments were repeated in other places with the same result, and after he had decided upon their accuracy, he called it, "*aria nativa delle paludi*," native air of marshes. This air burns very slowly with a beautiful thick lambent flame, but it is necessary that the opening of the vessel in which it is contained be rather large, otherwise it will not burn so well, but with interrupted crackling noise, and with so very faint a light as scarcely to be perceived. If a taper is merely introduced into the vessel it will inflame the contained air; but if it be thrust down towards the bottom of the vessel it is extinguished. To burn well it is necessary either to be exposed to, or mixed with a certain quantity of atmospherical air.

Volta gives a translation of a letter, dated Craven Street, April 10th, 1774, which Dr. Franklin wrote to Priestly, in which he gives an account of observations and experiments made in North America, on the very same subject. Over the surface of some rivers in New Jersey, and of a mill canal, Franklin understood that a flame had been excited which flickered, spread, and continued to burn for about half a minute when a light was approached to it. Franklin himself tried to obtain the same result here by puddling some stagnant water with a stick so as to force some bubbles of air to the surface of the water, with the view of lighting them with a taper. Although he could not succeed in this attempt, however, he says that he caught an intermittent fever, which he could not ascribe to any other cause, but to the putrid air which he inspired for a long time, while he was laying upon the ground to perform these experiments.

These facts being ascertained, Volta went afterwards to examine the burning grounds at Pietra Mala, on the top of the Appenines, on the road between Bologna and Florence; and at Velleia, on the mountain of the dukedom of Placentia. There he found that the flames covering those grounds were nothing else but the same air in combustion. He also collected it in bottles, by throwing over the burning places, a sufficient quantity of water to extinguish them, when air came bubbling copiously up to the surface of the water. He also bored the ground in several places, where flames did not exist, and flames arose from these holes when a taper was approached to them; which grew higher when pressed or stepped over the ground with his feet. Many other interesting inquiries were made by him at the same time regarding the topographical condition of those places.

He afterwards discovered that the slightest electric spark was sufficient to inflame this air, even in close bottles, provided a proper quantity of atmospheric air was previously mixed with it. From this fact he explained the flying fires, and many other meteorological phenomena of a similar nature both in the earth and in the atmosphere, in calm and stormy weather, which happen in Summer in very hot climates, and are too commonly ascribed entirely to electricity. In like manner did Volta explain, and we think very properly, the extraordinary case which happened at those times, of a clergyman, whose name was Joseph Franchini, who threw out from his stomach some very foetid gas which took fire when it approached the air. He ascribed it to the natural evolution of phosphuretted hydrogen gas into the stomach which takes fire as soon as it is exposed to the atmosphere. This clergyman had been suffering for a long time from dyspepsia. Connecting then together these, and many other similar facts concerning his inflammable air of marshy grounds, he ascended to the more majestic phenomenon of volcanos and earthquakes, which he considered to depend on the natural chemical decomposition of mineral substances produced by the continual action of sulphuric acid and water upon them within the earth, from which, as in a very small scale in our artificial preparations, hydrogen gas is obtained in very large quantity, which burst out in copious flame, and agitated the terrestrial globe.*

We will not at present return to Mr. Orton, nor enter into any discussion on the most probable cause of earthquakes, nor stop to consider whether it may be more in ac-

* It may be worth attention here to state that the new island which was lately discovered in the Mediterranean close to Sicily has disappeared and left no other trace of its former existence, than a vast whirlpool, in which the waters are agitated by constant eructations of subterraneous gases. It would be very interesting to endeavour to collect some quantity of them for chemical analysis.

cordance with well ascertained facts, to suppose that electricity, or the formation of *steam*, as Mr. Orton says, is the principal cause of that particular natural phenomenon. However, we do not conceive, why the escape of *steam* into the air should not produce or favour occasionally these epidemical visitations. At least, Mr. Orton would suppose that natural *steam* be just like that of our steam-engines, which is produced from the evaporation of pure water; had we to take, as something like a specimen of it, the copious vapours continually arising from volcanos, we dare say that they cannot be the most healthy effluvia to breathe.

After this imperfect, but we hope very convincing, account of Volta's experiments on the malaria of marshy grounds, one will be surprised to read the following passage from the Quarterly Journal, 1827, by Dr. Macculloch, with whose opinion Mr. Orton perfectly agrees, as appears from the following quotation, p. 419, Orton's.

"Experiments carefully conducted (as ought not to be doubted when Vauquelin has been engaged in them) have not detected even the presence of any new substance in the atmosphere of marshes, far less its nature. It is, however, evident that it cannot be any of the hydro-carburetted, or other chemical gases, which it has at different times been supposed; while remaining thus in darkness, the only test of its presence continues to be its effects as to disease which it produces on the human body."

When Volta was examining the burning grounds of Pietra Mala, and Velleia, he was informed that those natural fires were sometimes occasionally extinguished by violent blasts of wind, but that they increased very much by heavy falls of rain in stormy weather, and that a stream of water, and a lake near to those places, bubbled up a greater quantity of air, and had the appearance of boiling water although it was quite cold. Volta did not, like Mr. Orton, call for electricity to explain these facts, but thought that a greater quantity of his inflammable air could have been forced out during the absorption, or infiltration of water into the ground, or into some cavities under it, where a large condensed quantity of gas had been collected in consequence of a slow process of decomposition of some very large masses of vegetable and animal substances (as for example, a forest or a marsh) which had a long time ago been buried under a sudden cleaving of mountains or of the ground. This, which was a mere supposition when the high mountains of Pietra Mala were examined by him, became an incontestible fact when Velleia was examined, where it manifestly appeared that this old Roman town was buried by one of those extraordinary accidents which change so often the surface of our globe. Even in our days accidents of a similar nature have happened although on a small scale; but large enough to bury several houses in a situation distant from Velleia only about two miles. The burning spot is not very far from that buried town, in the lowest part of a declivity of the mountain, near a torrent. Volta remarks, that these burning grounds have been very erroneously considered of a volcanic nature, since there is not the least trace of any volcanic eruption. Earthquakes are to be felt more in these places than in others. The character of the earth in those burning grounds are such as to give every reason to suppose the pre-existence of large quantities of vegetable matters.—That this inflammable air did not originate in any bituminous matter contained within those portions of earth from which it was extricated he proved by analysis, which at the same time tend to shew that it maintains some connexion with chlorine and its compounds. He put six ounces of the earth of the burning ground of Velleia into a retort, and he subjected it to the intense action of heat. Although naturally black it changed into a grey colour, and shrunk into small hard masses. Amongst other products at the neck of the retort he found a substance resembling sublimed acid, and at the bottom a residual fluid which tasted strongly of muriatic acid. A similar analysis has been performed by Baron Dierich on the earth of Pietra Mala, and analogous products were obtained.

In exploring the particular vicissitudes which those natural fires undergo in dry and rainy weather, and having supposed that the infiltration of water could produce such an increased quantity of evolution of gas to increase them, the idea was suggested to Volta of a very simple apparatus by which he brought the thing to a degree of demonstration.

A large, long, square box of wood was properly filled with his inflammable air. Over the lid a great many holes were pierced, which were covered with a quantity of clay and mould laid upon its surface, which was so intermixt by a weed of grass as to imitate a natural meadow. Water was poured upon this artificial ground, out of a watering-pot, so as to resemble rain; when this water, filtering through the clay into

the box, caused some of the contained air to ascend through the apertures in its lid to the surface of this artificial ground, and a taper was applied to it, it ignited just in the same way as at the firing spots of Pietra Mala, and Velleia. Over this ground he could perform all the other experiments, which were done there. Had the lid of his box been disposed in such a manner as to admit being pushed down into its cavity by pressure over its surface, we dare say, that even without water the gas would have escaped up through the holes, and increased the flames, just in the same way as when Volta pressed with his feet over the ground which he bore at Pietra Mala and Velleia.

These facts and observations might, in our opinion, explain more naturally, and in a less hypothetical way some of the anomalies which rather too often meet Mr. Orton in the many and very important facts which he has brought forward (more particularly in his supplement) and which are left sometimes entirely without any explanation at all, or are adapted to his electrical theories. If we consider the peculiar topographical nature of some of the Indian districts, which he gives us some beautiful and minute description of, we do not indeed see any reason why it should not happen that an increased evolution of marshy effluvia from great falls of rain, or by the march of large masses of people over those grounds ought not to take place, even though some other causes are not acting in combination with the former.

Marshy grounds, as those which we have seen so often in Italy, are composed of a very thick clay, very dark in colour, and soft or greasy to the touch when moist; but which becomes very hard, whitish, and brittle after very dry and hot weather. Their surface is covered with a hard crust, not very deep, underneath which the earth remains as black as almost jet, and gives out a particular smell, not always disagreeable, which is by some compared to that of chlorine. Such places very often contain quantities of worms, which find in it a great supply of nourishing substance.

We dare say that, if some people had to step, or walk over those grounds, a larger quantity of gas would rise up from the numerous cracks, and render the air more infectious; and if a light were brought to them perhaps this air might be ignited, as in the experiments of Volta. This supposition, which may appear at first rather fanciful, could, in our opinion, explain how certain portions only of travelling bodies, and more particularly their followers, have been especially exposed to the ravages of cholera, &c.

We are very much astonished to find Mr. Orton stating, that it is *a most striking and well-established fact* in the history of the disease in India, that troops are more subject to it in camp than in quarters, or when marching, or travelling; and afterwards to add, "but these facts give no idea of the dreadful extent to which this *simple, and apparently harmless circumstance* is capable of operating to the destruction of human life."

We are sorry that we cannot judge from our personal knowledge of the real topographical condition of the districts where those travelling bodies were marching. But were we to judge from some remarkable instances in which they have been described to us in Mr. Orton's book, we should say that the low, damp situations of marshy grounds; the rice fields, the thauk over which these travelling bodies either marched, or on which they were stationed, were sufficient causes for the origin of the disease; while the stormy weather and the rapid changes of temperature to which they had been exposed, were nothing else but simple exciting causes of the disease.

An important circumstance, entirely unnoticed in Mr. Orton's work, in regard to these travelling troops, has been related to us by Colonel Walker, who has been in service in India. These marching troops, not only sleep in the field quite exposed to the baneful effect of the malaria arising from the ground; but their marches take place *always at night*. Sometimes they are obliged to march along a small narrow passage through marshy ground, and forests, among an immense quantity of jungles and other marshy plants, which grow with rapidity, and with all the luxuriant vegetation proper of marshes in hot climates.

Is it then surprising if such troops, or any other travellers have been caught by the disease, when they were so exposed, and *in the best moment* to absorb the deleterious principle which produces it; when, on the other hand, they were in the mean time subject to the influence of its exciting causes?

Every one who has travelled in Italy must have experienced the bad effects of malaria in crossing the Pontine marshes; and more especially if they have travelled at night, in hot and close weather, in open carriage, lightly dressed, and particularly if they felt

drowsy ; no matter if the weather is fine or stormy, although in Winter the risk is a great deal less.

In August, 1814, when returning to our native country after an absence of six years, we travelled through the unhealthy valleys, from which malaria is originated, in an open carriage, and lightly dressed, in the first part of the evening. The night was very fine ; the day had been very hot and dry ; but we found the atmosphere damp and chilly, and the fields were covered with a white dense mist, not very high from the ground. A few days afterwards we were seized by a quartan ague. Of six persons of the travelling party we were the only one who suffered, and that probably in consequence of our long absence from that country. The inhabitants of malarious countries all know the danger of sleeping with windows open, or of wandering about at night, in search of cool refreshing air.

Nor is it at all surprising if the disease has always shown in India a marked disposition to spread along the banks of the rivers, for which we do not want to have recourse to *human intercourse* for the explanation of this particularly remarkable circumstance. It is quite sufficient to direct our attention to the topographical description of the districts through which these rivers run. A single quotation from Mr. Orton's work may give some idea of what we state in regard to the southern division of the Indian peninsula. "The streams which cross that wide plain are continually diverted from their course on each side into canals and expanses of rice-ground, which attend them, and leave the sea, excepting in the rains, but a small tribute of their water." We dare say, on the contrary, that rivers in India are the proper places for malaria, and we need not wonder, if in these rivers, where many barges are going up or down, they should act in a larger scale in favouring the evolution of a larger quantity of gas, just as in a smaller way did Volta's stick when moved in the muddy waters of the *Lago Maggiore*.

The following interesting fact, just related to us by one of our fellow-countrymen, who was living in the same district where we had our birth, may be worth narrating, as its authenticity may be entirely depended on. This gentleman was travelling in a gig along a road which crossed a large plane of rice-field that stood on each side of it. It was during a fine night in July, and precisely in that time when the water covering the fields was allowed to flow out through two ditches, which were parallel, and near to each side of the road. In one part, where the road was lower, the water from the ditches had overflowed. Soon after he crossed this place, a column of a brilliant flame rose from the surface of the water on his right hand, and followed the course of his chariot for a long space ; when, in ascending a high trench, and turning on his right, the wandering fire vanished when it reached and struck against the high bank of the trench. If he threw his whip towards it, the flame retired and soon followed him again. This phenomenon, which is not uncommon, tends to prove how easily a current of deleterious gases arising from stagnant waters or marshy grounds may follow corps of travelling troops, and more especially barges, or ships going up and down rivers, or sailing by sea, in which a kind of infectious atmosphere may exist. This mode of propagation of the infectious malady from one country to another has been so generally admitted, and every where distinctly observed, as to leave almost no ground to doubt of its reality ; when, on the contrary, the supposition of its having been diffused by contagion meets everywhere with so many and striking exceptions, that it appears very often highly objectionable. From the facts which we have read in Mr. Orton's book alone, which are certainly very copious and valuable, we think no one can doubt that the principal and primary cause of the Indian malignant cholera is to be attributed to miasmata originating principally from the decomposition of the immense quantities of vegetable substances which are undergoing a process of decomposition under the surface of the earth, and which exhale a gas that has acquired a more virulent character by the extraordinary vicissitudes and natural phenomena which have obtained in that country for a progressive series of years.

Although we do not pretend to say that the very same principle has been the remote cause of the European cholera also, yet we may say that the facts known at this moment tend to support such a doctrine. On this subject, however, we shall decline speaking particularly until a greater number of facts has been laid before the public.

Had we now to ascribe the salubrity of Kristofsky Island, and several other woody districts in Russia, where the ground underneath is not marshy, and the vegetation is not so luxurious as in India, to the property which trees of a resinous nature, more particularly, have of absorbing carbon and hydrogen, of which elementary

principles, we dare say, marsh miasmata chiefly consist; or if we would ascribe the salubrity of Baden, near Vienna, and the promontory on the Caspian shores, to the property of the sulphureous emanations of attracting hydrogen, and of facilitating the decomposition of the pestilential miasmata; the following questions would very probably arise against our supposition.

Why did this malaria spread over such a great extent of the world, and advance progressively in particular directions for so many years, and after reaching a place, leave it suddenly, to appear with the same violence in other localities? Why did not this disease appear before, where proper grounds existed for the evolution of similar miasmata?

Although we are quite aware of the difficulty or impossibility of giving a satisfactory answer to these queries, we must say, however, that a similar and almost identical disease was known and observed before; that it is even in our times known, no doubt, in a less severe degree, and certainly not so extensively as now, in the very same places where that malarious principle originates. Hence has it been described in Italy, in Spain, and even in London, by old authors; and in the two former countries diseases of a similar character are to be seen yet, with only this difference, that they are described and known under a less objectionable name, and less fear is attached to them. In the last December number of the French Medical Review, a paper on this subject has been inserted, which was written by Dr. F. Pauli, junior, of Landau, (*Rhénane Bavaria*), in which he has pointed out the great resemblance, nay, identity of the malignant cholera, with the *pernicious intermittent*, and *remittent fevers*, which are not seldom seen in that malarious district, but which are now and then accompanied with *choleric symptoms*.

Had we not in August, 1829, a limited, although not less severe, manifestation of the very same malignant disease in a school at Clapham, in consequence of a very foul drain or cesspool having been opened, and its contents thrown out into a garden adjoining the school? In a day or two afterwards one of the boys was attacked; and in two days more, twenty others out of the total, thirty, were taken ill. Cases of a similar nature have been observed at many other periods and in many other places. Had not this malignant disease been confused with the common and simple spasmodic cholera, to which no other resemblance exists than in a particular set of symptoms, we could have obtained some more correct notion of its real pathological characters.

In explanation of the cause of the present extensive diffusion of this fatal disease, we wish to submit to the attention of our reader the following quotation from Gibbon's History of the Decline and Fall of the Roman Empire, (vol. vii. p. 418, § iii.) where at cap. xliii. he gives the history of the origin and progress of the great plague which ravaged the world in the time of Justinian. "Ethiopia and Egypt have been stigmatised in every age, as the original source and seminary of the plague. In a damp, hot, stagnating air, this African fever is generated from putrefaction of animal substances, and especially from the swarms of locusts, not less destructive to mankind in their death than in their lives. The fatal disease which depopulated the earth in the time of Justinian and his successors, first appeared in the neighbourhood of Pelusium, between the Serbonian bog and the eastern channel of the Nile. From thence, tracing as it were a double path, it spread to the East, over Syria, Persia, and the Indies, and penetrated to the West, along the coast of Africa, and over the continent of Europe."

"Such was the universal corruption of the air, that the pestilence which burst forth in the fifteenth year of Justinian was not checked or alleviated by any difference of the seasons. In time, its first malignity was abated and dispersed; the disease alternately languished and revived; but it was not till the end of a calamitous period of fifty-two years, that mankind recovered their health, or the air resumed its pure and salubrious quality."

At this period were presented very extraordinary natural phenomena; comets appeared, and earthquakes occurred several times each year in different parts of the world.

Now from analogy we would say, that India has been known as the birth-place of the malignant cholera. This extensive and very fertile country is intersected by numerous large rivers, which spread their waters over the low and equal plains to run slowly to the sea. This circumstance, favoured by the continual action of a vertical sun, produces an extensive progress of decomposition among the large quantities of vegetable

substances, which are the result of the highly luxuriant vegetation of those productive countries.

By particular extraordinary natural phenomena, as excessive falls of rain, earthquakes, near approach of comets, &c. these deleterious effluvia are evolved, and emanate in larger quantities, and either by means of human intercourse, or by the influence of the natural currents of electricity, they are transported or diverge in certain particular directions, where proper matter for their attraction, or evolution is found. There they make sad ravages, and establish a temporary focus of infection.

Both plague and cholera owe perhaps to the different sources of the elementary principle from which their miasmata originate—the one chiefly from the animal, the other from the vegetable kingdoms—their characteristic quality, of the first being highly contagious, when the other is not naturally so, in the *true sense of the word*, but may manifest a certain contagious nature, when by contingent circumstances its natural constitution is altered, as when true typhus fever occurs in conjunction with cholera, and the like.—Hydrogen, carbon, azote, and oxygen are the elementary principles of which those classes of natural products are chiefly composed. Of these the last only is not possessed of a deleterious influence on the animal body: while the others either separately or in combination with each other, are highly obnoxious; and it is perhaps only in consequence of their combination with oxygen that their pernicious character is either lost, or highly modified in many instances. A superadded quantity of the former evolved from the earth, and diffused in the air, may induce in it an infectious property capable of producing the present, or any other malignant disease.

In a subject of such great obscurity as this, we hope to be excused if we attempt to throw some light over it, even by means of hypotheses, which being supported by facts, may give them a greater degree of probability.

4. Drs. O'Shaugnessy and Clanny's Analyses of the Blood in Cholera.

We are sorry to see that, since medical gentlemen have dedicated themselves to the analysis of the blood and other fluids evacuated by cholera patients, none of them have thought proper to direct their chemical inquiries to the air. And we are the more disappointed by their omission, since it was stated by Dr. Jækriken of Moscow, that the air of some cholera hospitals was discovered to be altered in its composition. Experiments of this matter might have produced some interesting result. As we mentioned the experiments instituted on the blood of cholera patients, we may here properly remark, that Dr. O'Shaugnessy obtained the following result:—

"1. The blood drawn in the worst cases of the cholera is unchanged in its anatomical or globular structure. 2. It has lost a large portion of its water; 1000 parts of cholera serum having but the average of 850 parts of water. 3. *It has lost also a great proportion of its natural saline ingredients.* 4. Of the free alkali contained in healthy serum, not a particle is present in some cases, and barely a trace in others. 5. Urea exists in the cases where suppression of urine has been a marked symptom. 6. *All the salts deficient in the blood, especially the alkali or carbonate of soda, are present in large quantities in the peculiar white deflected matters."*

Such are the results of Dr. O.S.'s analysis, and they are indeed such as we should expect to find in a disease in which all the secretions are stopped, and in which all the lymphatic and lacteal vessels of the intestinal canal are pouring out, or, if we may say so, vomiting forth all the most fluid parts of the blood, which itself would probably have been ejected, as in some cases it was, if this inverted movement had not been so rapid, or the crassamentum of the blood not so soon condensed in the largest vessels.

Dr. Clanny of Sunderland instituted some analyses of the blood of two individuals who died of cholera. One was a man of the name of Elliot Todd, æt. 33. He was attacked on the 12th of December, 1831, at 2 o'clock, a.m. Blood was extracted by V.S. ad oz. vij. and half. He died at 7, p.m. of the same day. "This blood, on applying the tongue to it, had no taste, nor any particular smell: he also tasted it again, sometimes after it had been drawn. The colouring matter was tasted afterwards, the coagulated albumen, and the fibrin, but in them no taste was found, nor any smell. It contained no gases of any description: was black as tar.

The other individual was a sailor who was taken ill in October last. The blood of this man contained one cubic inch of carbonic acid in the sixteen ounces which were taken.

	The Sailor.	Elliot Todd.
Water.....	756.....	644
Albumen, (coagulated).....	121.....	31
Colouring matter	59.....	253
Free carbon	32.....	66
Fibrin pressed and dried	18.....	6
Muriates of soda and potassa, carbonate of soda, and ani- mal extraction	14.....	0
	<hr/> <hr/> 1000	<hr/> <hr/> 1000

The blood in Todd possesses only two ounces of serum, which was like serum of healthy blood in appearance."

If these results could be ascertained in many other cases they would be of the greatest importance to point out the real difference in the pathology of these two diseases, the common, and malignant cholera. They would tend to establish the important pathological principle laid down by Mr. H. Bell: that, in common cholera we have *depraved secretions*, producing great constitutional derangement: when in the malignant one there is *suspension of secretion*, resulting from a general disorder. In the first case the object of the physician is to *evacuate crudities*, and *correct disordered actions*. In the 2d the curative indications are to *relieve the symptoms*, and to *restore the function*.

About the particular advantages to be derived in the treatment of cholera from these experiments, we will abstain to say any thing now, as we expect to be in a short time favoured with a public report on this point. If, however, we were to judge from the nature of Dr. Clanny's celebrated discovery in the treatment of this disease—a pyramidal cork, and a T. bandage!!!—we should say that little indeed is to be expected.—From what has been stated by Dr. O'S. in the Westminster Medical Society, we should suppose that, from his experiments, he finds reason to advocate his proposed method of treatment in cholera, by injecting such salts into the veins as would restore to the blood its purple colour. On this subject we shall ask Dr. O'S this question: if he had submitted some mineral substance to the decomposing power of a galvanic battery, and if the conductors of the battery were cut through, what could be the advantage of pouring additional quantities of acid into the troughs with the view of restoring the progress of decomposition?

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XIII.

REPORT OF THE MADRAS MEDICAL BOARD ON EPIDEMIC CHOLERA.†

(Drawn up by Order of Government, 1824.)

WHEN the Epidemic Cholera seemed to have completed its progress throughout the territories of this Presidency, it was intimated by Government to the Medical Board, that the interests of the medical science and of humanity, would probably be promoted by a history of that disease, as it had appeared amongst the population, as well as

* The above review has been drawn up by a distinguished foreigner, who has paid great attention to the subject, and is well conversant with etiology in general.—ED.

† As the Report of the Madras Medical Board is the latest of the Indian Reports (1824), and consequently had the advantage of the Reports from Bombay and Bengal, so it is, by far, the most valuable. We could not do a greater service to the profession and to the public than by re-publishing this most important document. At the end of the article we shall give a tabular analysis of all the individual Reports from which the aggregate was compiled.

We beg particularly to state, that this article is verbatim et literatim from the Madras Report (with the omission of some tabular returns and extraneous matters, for which we had not room), and not a *review* of the Report.—EDITOR.

amongst the troops; with an account of the various modes of treatment, which had been at different times adopted by different Medical Officers at their respective stations, and the success with which they had been attended.

The Honorable the Court of Directors have also subsequently ordered, that the particulars of the progress of Cholera through these territories, and the different modes which had been adopted in the treatment of persons afflicted with it, should be prepared and printed. In making this communication the Honorable Court stated, *that they had caused the reports which had been drawn up under the superintendence of the Bengal and Bombay Medical Boards to be circulated amongst the most eminent of the Faculty in England:* and the Court expressed their hope, that the circulation of these documents, together with that of a similar report from this Presidency, might tend to produce opinions and advice calculated to check the ravages of this afflicting malady. It is in pursuance of these instructions, that the present report has been prepared.

In addition to the measures for collecting professional information, which the ordinary discipline of the service implies, the Medical Board did not neglect, upon the first appearance of the epidemic cholera, specially to call the attention of all Medical Officers on this establishment, to the necessity of contributing such remarks respecting the disease as their opportunities for observation might enable them respectively to do; and it is a just tribute to the profession, which is gladly and gratefully awarded, to state, that the call has been fully answered by *almost every member of it.* A mass of information has thus been furnished, which leaves to the writer of this report little else than the labour of selection and arrangement. Many valuable communications have been received in a condition, fitting them to be at once offered to the public: and these will accordingly be found under the proper head in this report. Others, forming indeed a great proportion of the whole, though intrinsically valuable, and extremely interesting, are yet drawn up in a desultory manner, and in an insulated form, which precludes the propriety of their publication. In disposing of the contributions of the latter description, the utmost care has been taken to embody the facts and observations contained in them, under the proper heads of pathology and therapeutics. No observation has been set aside *merely* as being improbable; no theory absolutely rejected *merely* as being untenable: for our present state of knowledge with regard to cholera did not appear to warrant the absolute rejection of any medical opinion concerning it. Every alleged fact, and distinct theory, therefore, which have been recorded, find a place in these pages; and are thus left to be tried by the test of time and experience. So scrupulous indeed have the Medical Board been in the exercise of their authority, throughout the course of this destructive disease, that, even at the hazard of incurring the imputation of empiricism, they have given currency to the notice of remedies, and sanctioned their trial, although the exhibition of them might be little supported by any received system of medicine.

It would doubtless in some respects, have been more desirable in an official report, to have published every communication as it had been received, and with the name of its author, rather than to offer a digest of them: but, independently of the objections that have just been assigned, there existed another, which was, the great uniformity of these reports: for, though all Medical Officers have not been equally fortunate in their opportunities of observation, nor possessed of equal leisure, and an equal degree of zeal in the cause of science, yet by far the greater proportion of the reports, though occasionally relieved perhaps by a diversity of opinion on the *theory*, still present, in respect to the *history* of the disease and general plan of *treatment*, a repetition, which it would be altogether unprofitable to publish. It is perhaps more necessary to offer some apology to those Gentlemen whose reports, written in haste, and on the first appearance of the disease, are now published at this late period: and, had our knowledge of its nature, and method of cure kept pace with the extended means of observation, which the lapse of time has unhappily too amply afforded, there might have been good reasons for objection. The best apology, however, will be found in the reports themselves, which even when contrasted with those written at later periods, and under circumstances in every respect more favourable, will still be found to present most interesting matter, and to redound greatly to the credit of their authors, many of whom are now no more. Whenever supplementary remarks have been received from the same writer, they have been appended to his original communication..

Although no paper is inserted in this report, which is not official, or authenticated, nor any thing advanced, unless founded on materials exclusively of that nature, yet it is

nevertheless to be remembered, that medical *facts*, are too often merely medical opinions ; their authenticity, in reference to the views of the narrator, is undoubted : but liable, as even the most deliberate and sagacious observers are, to error and misconception, we are bound to receive with due caution and circumspection any *facts* or *opinions*, which are palpably at variance with general experience. It is presumed, however, that the report will be found upon the whole to convey a very considerable and unexceptionable mass of evidence respecting the nature of that species of cholera, which has so long afflicted the Indian community : and, while we sincerely hope that the actual presence of the disease in Britain will never afford more immediate means of judgment, we would still echo the sentiment of the Honourable Court, that the eminent of the Faculty there, may be more successful in their researches into its nature, cause, and cure, than their brethren in this country have been.

While the constitution of the Company's Medical Service is singularly well adapted for the collection of information, this advantage has almost been rendered a dead letter from the want of periodical printed reports ; a want the more especially felt in a country where the change of functionaries is rapid and perpetual, and, consequently, where individual or personal knowledge is of less public avail. The evil here complained of has been strikingly exemplified in the instance of cholera, which, on its first appearance, was considered to be merely a severe, or unusual form of the disease known by the name of cholera morbus. This idea, however, being soon, and perhaps too hastily, abandoned, a persuasion was then almost universally entertained, that it was in fact *a new disease* : and, with a strange inconsistency, an expectation seems immediately to have arisen, that the nature of this new disease was more perfectly discoverable than the nature of those diseases, which have baffled the experience of ages ; and farther, that a specific cure for it, was no less an object of easy attainment. Hence arose that diversity of opinion, and variety of practice in cholera, which at first generally prevailed, and which, it is feared still continues to exist to a very considerable degree. When it was found that a complaint, similar in all its symptoms, had been described in several European publications on diseases of India, the knowledge of the circumstance was too confined, and came too late to do away the evil, which had arisen. The Indian community, including the Medical profession, were taken, as it were, by surprise : the disease, if not new in reality, was new at least to them ; and the pre-existence of cholera, in a form no wise different from that which it has on this occasion assumed, has been somewhat reluctantly admitted, and too much kept out of sight in reasoning on its pathology.

[*Appearance of Cholera in 1787 at Arcot.*] This state of things, however, cannot be imputed to the want of foresight in our predecessors ; since we find the following notice entered in the proceedings of the Medical Board of this Presidency, under date the 29th November, 1787, but which, being confined to a manuscript entry in the records of an office accessible only to its members, it became, as has been observed, a dead letter.

" A disease having in October last prevailed at Arcot similar to an Endemic that raged amongst the natives about Paliconda in the Ambore valley in 1776 in an army of observation in January 1783, and in the Bengal detachment at Ganjam in 1781, and several other places at different times, as well as Epidemic over the whole coast in 1783, under the appearance of Dysentery, Cholera Morbus, or Mordyxiim, but attended with spasms at the praecordia, and sudden prostration of strength as characteristic marks ; seeing this Board is ordered to be a record, the Physician General recommends as a guide to future practitioners, that a letter from Mr. Thompson, Surgeon of the 4th Regiment, containing an account of the dissection of one of the patients who died of the disease, describing the state of the viscera, may be entered on the face of the proceedings, together with two letters from Mr. Duffin, Head Surgeon at Vellore ; and one from Mr. Davis, Member of the Hospital Board, containing an account of the causes, symptoms, and successful treatment, of the sick, by the use of the hot-bath, and fomentations, supporting the *vis vitae* with wine, &c., and removing the putrid colluvies from the intestines. The Hospital Board, sensible of the advantages that may result to the service from the mode proposed by the Physician General, direct their Secretary to enter the Letters he has mentioned as follows."*

[*Noticed by Bontius in 1629.*] The Dutch Physician, Bontius, who wrote in the year

* Vide page 506, where this document is embodied in the Report.—Ed.

1629, at Batavia, thus describes cholera morbus. "Besides the diseases above treated of as endemic in this country, the cholera morbus is extremely frequent; in the cholera, hot, bilious matter, irritating the stomach and intestines, is incessantly, and copiously discharged by the mouth and anus. It is a disorder of the most acute kind, and therefore requires immediate application. The principal cause of it, next to a hot and moist disposition of the air, is an intemperate indulgence of eating fruits; which, as they are generally green, and obnoxious to putrefaction, irritate and oppress the stomach by their superfluous humidity, and produce an æruginous bile. The cholera might, with some degree of reason, be reckoned a salutary excretion; since such humours are discharged in it, as, if retained, would prove prejudicial. However, as by such excessive purgations the animal spirits are exhausted, and the heart, the fountain of heat and life, is overwhelmed with putrid effluvia, those who are seized with this disorder generally die, and that so quickly, as in the space of four and twenty hours, at most."

Such, among others, was the fate of Cornelius Van Royen, steward of the Hospital of the sick, who being in perfect health, at six in the evening, was suddenly seized with the cholera, and expired in terrible agony and convulsions before twelve o'clock at night; the violence and rapidity of the disorder surmounting the force of every remedy. But if the patient should survive the period above-mentioned, there is great hope of performing a cure.

This disease is attended with a weak pulse, difficult respiration, and coldness of the extreme parts; to which are joined, great internal heat, insatiable thirst, perpetual watching, and restless and incessant tossing of the body. If together with these symptoms, a cold and fetid sweat should break forth, it is certain that death is at hand."

In treating of the "Spasm," this author gives the following account. "The disorder of the Spasm, almost unknown with us in Holland, is so common in the Indies, that it may be reckoned among the popular and endemic diseases of the country. The attack of it is sometimes so sudden, that people become in an instant as rigid as statues; while the muscles either of the anterior or posterior part of the body, are involuntarily, and violently contracted. A terrible disorder! which, without any primary defect of the vital or natural functions, quickly precipitates the wretched sufferer in excruciating torment to the grave; totally deprived of the capacity of swallowing either food or drink. There are, likewise, other partial Spasms of the limbs; but these being more gentle and temporary, I shall not treat of them."

People affected with this disease look horribly into the face of the by-standers (truculente admodum astantes intuentur) especially, as often happens, when the cynic spasm comes on, and both the cheeks are drawn in convolution towards the ears; a red and green colour is reflected from the eyes and face; (ruber et viridis color ex oculis et facie oritur), the teeth gnash; and instead of the human voice, a rude sound issues forth of the throat, as if heard from a subterraneous vault; so that to those unacquainted with the disorder, the person appears to be *dæmoniac.*"

In speaking of cholera, Bontius no where mentions the *colour* of the matters evacuated. He talks indeed of æruginous bile: but that would appear, from the context, to refer to its assumed acrimonious quality, rather than to any sensible property; and we shall presently see that practitioners of much later times dwell greatly on the supposed bilious and irritative nature of the evacuations, when it is pretty evident, that they were merely speaking hypothetically. His descriptions indeed are not at all full: for, though he does not mention spasm as a symptom of cholera morbus, he states that Cornelius Van Royen expired in *convulsions*, within six hours from an attack of it. Still, in his description of cholera, where "the heart is overwhelmed," where "those who are seized with the disease generally die," and that within twenty-four hours at most; and in his enumeration of symptoms as marked in italics, every one, familiar with the epidemic cholera as it has prevailed in this country, will probably admit, that he has truly pourtrayed that disease, and no other.

Although Bontius has treated of "the Spasm," and of "the Cholera Morbus," under separate chapters, it is highly probable that these disorders were one, and the same.

It would seem that he has considered the tonic spasm as idiopathic, and the clonic spasm as symptomatic, yet it is evident by the expression, "there are likewise other partial spasms of the limbs," that both these forms of spasm existed in the same patient, a fact which is amply confirmed by innumerable observations in the present epidemic. If it be objected that he does not mention the usual symptoms of cholera as occurring in "the spasm," it may be answered, that neither does he mention the state of the skin, of

the pulse, nor of respiration, which functions it is impossible to suppose remained unaffected in such a commotion of the system.

The edition of Bontius, which has been quoted from, is an English translation published in London, 1769; but, from the passages in the original, as inserted in parenthesis, it is evident that the translation is not quite correct. The expressions, especially, of the eyes and face "*reflecting*" a red and green colour can only be intelligible by supposing, that the former were suffused with blood, and the latter changed to that ghastly and cadaverous hue, so familiar to us all in the collapse stage of cholera.

[*By Dr. Paisley in 1774.*] The next notice, in point of time, which we find of cholera, is in the copy of a Letter written by Dr. Paisley at Madras, dated 12th February, 1774, as given by Curtis, in his publication on the diseases of India. Dr. Paisley says, "I am favoured with yours, and am very happy to hear you have caused the army to change its ground; for there can be no doubt, from the circumstances you have mentioned, that their situation contributes to the frequency and violence of the attacks of this dangerous disease, which is as you have observed, a true cholera morbus, the same they had at Trincomalee. It is often epidemic among the Blacks, whom it destroys quickly, as their relaxed habits cannot support the effects of sudden evacuations, nor the more powerful operation of diseased bile."

The first campaign made in this country the same disease was horribly fatal to the Blacks; and fifty Europeans of the line were seized with it. I have met with many single cases since, and many of them fatal or dangerous, of different kinds arising from putrid bile being disturbed by accidental causes, or by emetics or purgatives exhibited before it had been blunted or corrected."

Dr. Paisley does not give any particular description of the disease: and though he dwells much on the putridity, and acrimony of the bile, he does not allude to the colour or appearance of the evacuations. He observes that "when it (the cholera) is epidemic here, it is totally a disease of highly putrid bile, which operates on the system as poison, and brings on *sudden prostration of strength, and spasms over the whole surface of the body.*" "In relaxed habits, when the *pulse sinks suddenly*, and brings on immediate danger, the same method must be pursued but with more caution." The letter is quoted by Curtis as referring to the cholera morbus, or Mort de Chien: and these extracts will probably be deemed sufficient evidence of the correctness of the reference.

It is highly important to remark, that Dr. Paisley here speaks of the disease as being "*often Epidemic;*" that it prevailed in that form in the "first campaign," and affected both the Europeans and Natives. The particular periods here alluded to are not known, but we have seen, by the extract from the records of the Medical Board, that cholera raged as an epidemic, in 1769, or 70.

[*By Sonnerat from 1774 to 1781.*] Sonnerat, whose travels in India embrace the period between 1774 and 1781, speaks of a disease on the Coromandel Coast, in all respects resembling cholera, and he notices it as "*an epidemical disorder which reigns.*" His account of it is this.

"There is also another epidemical disorder, which reigns, and in twenty-four hours, or sometimes less, carries off those who are attacked. It never appears but in cold weather."

"Debauchees, and those who have indigestions, are attacked with a looseness, or rather with an involuntary flux of the excrementary matter become liquid, but without any mixture of blood. They have no remedy for this current of the bowels,* which they call a sharp flux, but leave the cure to the care of nature."

"The flux of this kind which reigned some years ago, spread itself in all parts, making great ravages: above sixty thousand people, from Cherigam to Pondicherry, perished. Many causes produced it. Some were attacked for having passed the night and slept in the open air; others for having eat cold rice with curds; but the greater part for having eat after they had bathed and washed in cold water, which caused an indigestion, an universal spasm of the nervous kind, followed by violent pains and death, if the patient was not speedily relieved. This Epidemical disorder happened during the Northerly

* Probably "*cours de ventre,*" in the original. The edition here quoted is a translation by Francis Magnus, Calcutta, printed 1733.

winds in December, January, and February; when they ceased the malady disappeared. The symptoms of this disorder were a watery flux, accompanied with vomiting and extreme faintness, a burning thirst, an oppression of the breast, and a suppression of urine. Sometimes the deceased felt violent cholicky pains; often lost his speech and recollection, or became deaf, the pulse was small and concentered, and the only specific which Choisel, a foreign Missionary, found, was treacle and Drogue amere. The Indian Physicians could not save a single person."

"There is great reason to imagine that the perspiration being stopped and reflowing into the mass of blood, by finding its way to the stomach and bowels, occasioned the vomiting, which terminated by this flux."

"That which followed, two years after, was the most dreadful. It did not proceed from the same cause as the first, as it began in July and August: it first shewed itself by a watery flux, which came in an instant, and sometimes cut the deceased off, in less than four and twenty hours. Those who were attacked had thirty evacuations in five or six hours; which reduced them to such a state of weakness that they could neither speak or move. They were often without pulse; the hands and ears were cold; the face lengthened; the sinking of the cavity of the socket of the eye was the sign of death; they felt neither pains in the stomach, cholics, nor gripings. The greatest pain was a burning thirst. Some brought forth worms by stool; others by vomiting. This cruel pestilence affected all the Casts in general, but particularly those who eat meat, as the Parias. The Native Physicians succeeded no better in their treatment of this disorder, which was again renewed during the North-winds."

It is by no means easy to determine the precise dates of the epidemic visitations of cholera alluded to in these extracts, as prevailing, in the first instance, "some years ago," and in the second, "two years after." It is, however, reasonable to suppose, that a disease, which "spread itself in all parts," and carried off "above 60,000 people from Cherigam to Pondicherry," would not have been passed over without some special notice by Dr. Paisley, in his letter dated 1774 already quoted, had it occurred prior to that date. The presumption seems to be, that Mons. Sonnerat described invasions of epidemic cholera which took place subsequently to the year 1774. That they were certainly considerably prior to that epidemic, which is stated in the records of the Medical Board to have prevailed "over the whole Coast in 1783," is evident, from the date of the work; and consequently, when viewed in reference to other authorities, it is obvious, that cholera maintained its influence, with little apparent interruption, from a very remote period, down to a date comparatively modern. Sonnerat notices the "term mort de chien" as being used in India, but applies it to "indigestions," which "are very frequent," and from which "many have died suddenly."

[*Cholera observed at Mauritius in 1775, and in 1819.*] It appears from the report of a Committee of British Medical Officers at the Mauritius, which was assembled in the month of November, 1819, under the authority of the Government, in order to examine into the nature of the epidemic disease which then prevailed at that Island, that the epidemic cholera was not unknown there. The following is an extract from the report. "The Committee request to say, that they have not, either in this Island or elsewhere, met with a disease possessing the characters of that which now prevails; but that, from the reports of several individuals, some of whom belong to the medical profession, it does appear, that a disease, most strongly resembling in its symptoms, progress, and termination, that now under consideration, did for some time prevail in this colony in the year 1775."

The symptoms which are detailed by the Committee, as characterising the epidemic of 1819, sufficiently indicate the identity of that disease, with the form of cholera, which prevailed at the same period, and still continues, on the continent of India. "The symptoms, in the two cases alluded to, perfectly corresponded with those of the numerous instances of the disease, which have since occurred. Those more particularly characteristic of the disease are sudden and excessive prostration of strength, with sinking of the pulse; extreme coldness of the surface of the body, which is covered with cold viscid perspiration; and a distressing uneasy sensation in the abdomen, the progress of which has generally carried off the patient in the space of a few hours."

Dr. Burke, the chief medical officer in the Island makes the following observation in his letter transmitting the report of the committee. "A similar disease prevailed in this island in 1775, after a long dry season, &c. the symptoms, fatal and sudden effects,

and duration, of the disease would seem to be exactly the same. A hurricane put a stop to its ravages, which continued for probably two months, and caused a great mortality particularly among the Blacks and people of colour."

But it is necessary to state, that a committee of French Medical Gentlemen, who were assembled under similar circumstances with the British Committee, make no mention of the epidemic visitation of 1775. Assuming, however, the circumstance to be true, it is highly worthy of remark, that while, as we have shewn in the preceding pages, the Indian continent suffered under cholera, about that period, viz. 1775, the disease had then also extended to that remote Island.

[*At Ganjam, in 1781.*] Cholera appears to have manifested itself pretty extensively as an epidemic in 1781; its appearance on this occasion is thus noticed in the report on cholera by Mr. Jameson, Secretary to the Calcutta Medical Board. "A Division of Bengal Troops, consisting of about 5,000 men, was proceeding, under the command of Colonel Pearse of the Artillery, in the Spring of 1781, to join Sir Eyre Coote's Army on the Coast. It would appear, that a disease resembling cholera had been prevalent in that part of the country, (the Northern Circars), some time before their arrival; and that they got it at Ganjam on the 22d March. It assailed them with almost inconceivable fury. Men previously in perfect health drop down by dozens; and those even less severely affected were generally dead or past recovery within less than an hour. The spasms of the extremities and trunk were dreadful; and distressing vomiting and purging were present in all. Besides those who died, above five hundred were admitted into hospital on that day. On the two following days, the disease continued unabated, and more than one half of the Army was now ill." In a note it is added, "The occurrence of the disease on this occasion is noticed in a letter dated 27th April, 1781, from the Supreme Government to the Court of Directors; and the destruction which it caused in this detachment mentioned in terms of becoming regret."

After advertizing to its progress in the Circars, the letter thus proceeds: "The disease to which we allude, has not been confined to the country near Ganjam. It afterwards found its way to this place (Calcutta); and after chiefly affecting the native inhabitants, so as to occasion a great mortality during the period of a fortnight, it is now generally abated, and pursuing its course to the northward." It would have been interesting to have traced this disease, as it seemed to have put on the epidemical form, but every attempt to discover its further progress has proved fruitless.

[*Noticed by Curtis, in 1782.*] From this period, up to the year 1787, and perhaps even to 1790, the cholera would appear to have existed epidemically, in various parts of India. Curtis states, that the fleet, in which he served, joined Sir Edward Hughes's squadron at Madras, in the beginning of 1782; in May of that year, his ship, the Seahorse, arrived at Trincomalee, and he says, "The mort de chien, or cramp, I was also informed by the attending Surgeon, had been very frequent and fatal among the seamen, both at the hospital, and in some of the ships, particularly in the Hero and Superb." The Seahorse had no case of the disease till the 21st of June, when between that day and the 25th they had eight cases.

"In every one of the eight cases the symptoms were so much alike, both in order and degree, that a description of any one would answer almost equally well for every other. Any difference that took place was in the suddenness of the attack, or the rapidity with which the symptoms succeeded each other. In all of them the disease began with a watery purging, attended with some tenesmus, but with little or no griping. This always came on some time in the night, or early towards morning, and continued some hours, before any spasms were felt; and slight affections of this kind being very common in the country, the patients seldom mentioned them till they began to be more severe, and extended to the legs or thighs. This purging soon brought on great weakness, coldness of the extremities, and a remarkable paleness, sinking and lividity of the whole countenance. Some at this period had some nausea, and retching to vomit, but brought up nothing bilious. In a short time the spasms began to affect the muscles of the thighs, abdomen, and thorax, and lastly they passed to those of the arms, hands and fingers; but I never saw, then or afterwards, those of the neck, face, or back at all affected. The rapidity with which these spasms succeeded the first attack, and their severity, especially as affecting the muscles of the thorax and abdomen, denoted in general the degree of danger in the case. The affection is not, as in *tetanus*, confined to a

single muscle, or to a certain class of muscles only. Neither does it, as in the spasmus clonicus, move and agitate the members. It is a fixed cramp in the belly of the muscles, which is gathered up into a hard knot, with excruciating pain. In a minute or two this relaxes, is again renewed, or the affection passes to others, leaving the miserable sufferer hardly an interval of ease; and, lastly, it passes from one set to another; from those of the inferior extremity to those on the upper parts, leaving the former free. The patients complain much of the pain of these cramps; think they obtain some relief from friction of the parts, and cry to their companions to rub them hard. As the disease proceeded, the countenance became more and more pale, wan, and dejected; *the eyes became sunk, hollow, and surrounded with a livid circle: The pulse became more feeble, and sometimes sank so much as not to be felt at the wrist, in two or three hours after the spasms came on.* But so long as it could be felt, it was but little altered in frequency. If the spasms happened to intermit, it would sometimes rise a little, and the countenance assume a better look. The tongue was generally white, and more or less furred towards the root; the patients had all great thirst, or rather a strong desire for cold drinks; but there was no headache or affection of the sensorium commune throughout."

"The coldness of the extremities, which was perceptible from the very first, continued to increase, and spread over the whole body, but with no moisture in the skin till the severity of the pain and spasms forced out a clammy sweat, which soon became profuse. *The hands now began to put on a striking and peculiar appearance. The nails of the fingers became livid, and bent inwards; the skin of the palms became white, bleached, and wrinkled up into folds, as if long soaked in cold water;* the effect, no doubt, of the profuse cold sweat, which is one of the most pernicious and fatal symptoms of the disease, both from the effect it has in such a climate, of exhausting the strength, and in abstracting heat from the system. In some of the present cases, and in many others after this, we had recoveries from the severest degrees of spasmodyc affection; even where the pulse had been for hours completely lost at the wrist, and the body perfectly cold; but never of any who had these profuse cold clammy sweats, and where the hands had put on this appearance."

"All this while the purging continued frequent, and exhibited nothing but a thin watery matter or mucus. In many, the stomach became at last so irritable, that nothing could be got to rest upon it; but every thing that was drank was spouted out immediately; without straining or retching. *The countenance and extremities became livid, the pulsations of the heart more quick, frequent and feeble;* the breathing began to become laborious and panting; and, in fine, the whole powers of life fell under such a great and speedy collapse, as to be soon beyond the power of recovery. In this progression, the patient remained from three to five or six hours from the accession of the spasms; seldom longer. These began at last to abate, but with more internal oppression, great jactitation, panting and gasping for breath, from the diminished action of the respiratory organs; for there were no marks of oppression or effusion on the lungs; and the motion of the heart, so long as it could be felt, became more and more quick and irregular, till death came at last to the relief of the miserable sufferer." Sometime before that event took place, *the spasms gradually abating, left the sufferers entirely, and so much possession of their faculties did they retain, that they would continue to talk sensibly to their messmates, to the last moment of their life, even when the whole body had become perfectly cold, and all pulsation of the heart had ceased for a long time to be distinguishable.*"

"About the middle of July, 1782, I entered on duty at Madras Hospital. Here, again, I had occasion to see many more cases of the mort de chien. It was frequent in the fleet in the month of August, and beginning of September, the season at which the land wind prevails on this part of the coast. We had some cases in the hospital in the end of October, and in November after the monsoon, but few in comparison."

[Also by Girdleston.] Although cholera would thus appear to have been of limited prevalence in the Naval Hospital at Madras, in October, 1782, its influence was most severely felt at that period by the newly-arrived troops from England, as stated by Girdleston in his Essay on Spasmodyc affections of India.—He observes, "spasms were the first disease which appeared amongst the troops who arrived at Madras in October, 1782, under the command of Major General Sir John Burgoyne. More than fifty of these fresh men were killed by them within the first three days after they were landed in that coun-

try, and in less than a month from that time, upwards of a thousand had suffered from attacks of this complaint."

"The symptoms which commonly first presented themselves were coldness of the surface of the body, especially of the hands, feebleness of the pulse, and spasmodic contractions of the lower extremities, soon extending to the muscles of the abdomen, diaphragm, and ribs. As the spasms advanced, the muscles might be seen to assume the rigidity of cartilages; sometimes causing the body to remain immovably extended, sometimes bending the trunk through its whole length, anteriorly; and sometimes though seldom, backwards. The parts in which the spasms began generally remained rigid; but those which were subsequently seized with them, had momentary intermissions of the contractions; the only intervals of relief experienced by the patient from the most tormenting pains. *The hands and feet then generally became sodden, with cold sweat, the nails livid, the pulse more feeble and frequent, and the breath so condensed as to be both seen and felt, issuing in a cold stream at a considerable distance. The thirst was insatiable, the tongue whitish, but never dry; vomitings became almost incessant; the spasms, cold sweats, and thirst, increased with the vomitings; which last, if not checked, soon terminated the existence of the patient.*" "In this manner, most commonly was the succession of phenomena; but often they were so rapid in their attack, that they seemed to seize the patient all in conjunction instantaneously."

"In some few, the extremities remained warm; in others also the spasms were only clonic or convulsive. Some died in the first hour of the attack; others lived a day or two with remissions; when they died, either of universal spasms or an apoplexy. *On dissection of the bodies after death, it appeared that no injury had been sustained by the brain, liver, gall-bladder, stomach or heart.* The prognosis of this disease is formed with greater certainty from the warmth or coldness of the extremities, than from either the universality of the spasms, or the frequency or steadiness of the pulse. Thus if the spasms were ever so general, with warmth of the extremities, there was no immediate danger: on the contrary if the spasms were ever so trifling, with coldness, there was every danger to be feared."

Girdleston, like Bontius, treats of the "Spasms" as an idiopathic disease; yet it is obvious from his observations on the prognosis, that spasm was merely a symptom, and one of secondary importance. He has not noticed purging, and from the casual way in which vomiting is mentioned, it seems doubtful whether we are to consider purging to have been inadvertently omitted, or that it was really not present, as has often been observed to be the case on late occasions. It is accordingly assumed that the "spasm," described by Girdleston, was in fact the spasmodic cholera, or mort de chien of Curtis.

It is also noticed in the Bengal Report, that in the month of April, 1783, cholera destroyed above 20,000 people, assembled on occasion of a festival at Hurdwar; but it is said not to have extended to the neighbouring country. All these authorities would seem accordingly to establish the fact of the prevalence of cholera in India; and especially of its existence during the period extending from 1769-70 to 1787, when we find the first notice of the disease in the records of this Office as given in the extracts, page 239, and which we now come to consider.

[*Dr. Duffin's Account of it, at Vellore, in 1787.*] Dr. Duffin, in a letter dated the 28th October, 1787, says, "I returned yesterday from Arcot, where I had an opportunity of seeing the situation of the sick. The cholera morbus rages with great violence, with every symptom of putrescence, and so rapid in its progress, that many of the men are carried off in twelve hours' illness." Dr. Duffin considered the disease to depend on putrid bile; he recommended castor oil, external heat, frictions, and the internal exhibition of warm cordial drinks, as the plan of treatment he had always found successful. In a subsequent letter, dated the 3d November, he enters more fully on the nature of the disease. "The symptoms were generally pretty much the same in all I have seen, only the violence of the spasms was greater according to the stamina of the patient, and the quantity of putrid matter in the primæ viæ. They generally are seized with a nausea, frequent heats, and chills, a dryness of the skin, and numbness and uncommon sensation, as they express it, in different parts of their body. Then came on cold sweats, severe gripings, and mostly a purging of bilious colliquvies, appearing often in a ferment like yeast, and not unlike it in colour, with a putrid offensive smell, retchings to vomit, often bilious, and at other times scarce any thing is brought up, but the liquor that is drank; an intense thirst, oppression on the praecordia, with difficulty of breathing, fre-

quently the spasms begin with the first attack, though sometimes they only appear as the disease advances, and then generally affect the lower extremities, afterwards the abdominal muscles; and the whole system becomes convulsed. The pulse from the first sinks, and at times is scarce to be felt; profuse clammy cold sweats, and a pallid hue overspread the body; the countenance ghastly, the eyes sunk, and the voice scarcely to be heard, with great dejection. The tongue in general moist, till near the close of the disease, when it becomes dry and foul, and the breath offensive; the urine generally pale, and in small quantity."

It is to be observed, that Dr. Duffin, at the period in question, was stationed at Vellore, about 14 miles from Arcot; and that his description of the cholera could not be founded on any lengthened observation of the cases at the latter station, since he only made a very short visit to it. There seems some reason to doubt, therefore, whether he was not describing partly what he saw at Arcot, and partly what he had more experience of at Vellore, where the cholera was then also raging, but not in a very dangerous degree. His confident allusion to the bilious nature of the contents of the primæ viæ, and the success of castor oil in curing the disease, may lead us to suppose that at Vellore, he had in fact to contend chiefly with the cholera morbus as it is commonly termed, not with the epidemic or spasmodic cholera. This conclusion is supported by a reference to the sick returns, which happen in this instance to be somewhat less meagre and imperfect than they generally are found to be at that distant period.

It appears that, during the month of October, 1787, twenty-two Europeans were admitted into hospital with "cholera morbus" at Vellore, and two Natives; of whom it cannot be ascertained that any died, for the returns of that period do not shew the disease from which the casualties arose; however, only two Europeans died during that month at Vellore from any disease, and not one Native. At Arcot, on the contrary, 35 Europeans are entered in the sick returns, under the head of "cholera morbus," in October, 1787, but no Natives; and 25 Europeans died that month, a number which falls short of what Dr. Davis distinctly attributes to cholera alone. In November, 45 Europeans are returned at Vellore, under the head of "cholera morbus," and 1 Native; only one European died that month at Vellore. At Arcot, 17 Europeans are returned in November as ill with "cholera morbus;" only one death took place in all, but during this month it seems to have slightly affected the Natives, 12 being returned, of whom none died; there were at this time four Regiments of Native Cavalry quartered there. It seems reasonable, therefore, to infer, that the disease prevalent at Arcot, and described by Mr. Davis as "a spasmodic affection of the nervous system," was not the same, in general, with that which existed at Vellore, unless we impute a degree of efficacy to castor oil which can hardly be admitted.

[*Dr. Davis's Account of it at Arcot in 1787.*] Mr. Davis, a member of the then Hospital Board, appears to have been deputed from Madras, to investigate the nature of the sickness which prevailed at Arcot. In his report to the Board, which is dated the 29th November, 1787, he states as follows. "I found in what was called the epidemic hospital, three different diseases, viz. patients labouring under the cholera morbus, an inflammatory fever, with universal cramps; and a spasmodic affection of the nervous system distinct from the cholera morbus. I understood from the regimental Surgeon, that the last disease had proved fatal to all who had been attacked with it; and that he had already lost seven and twenty men of the regiment in a few days. Five patients were then shown me, with scarce any circulation whatever to be discovered; their eyes much sunk within their orbits; their jaws apparently set, their bodies universally cold, except at the praecordia, and their extremities livid. Mr. Pringle observed that these five men were attacked on the 26th October, that Mr. Duffin had seen them, and had recommended castor oil to be administered, &c. &c."

He then goes on to say, "finding on the day of their attack, the rectum had discharged its contents in the action of straining to vomit without being able to bring anything up, I directed a stimulant injection to each of these patients, which produced a copious discharge of faeces, without any bilious induration (indication?) whatever." Having prescribed some antispasmodic medicines, he says, "from all which, I had the pleasure to observe, that in four and twenty hours after my first visit, the spasms had totally subsided, the patient's voice, which all along had been so low as scarce to be heard, was returned almost to its natural state; the pulse that was imperceptible, full and even." After ordering some carminative purgatives he observes, "I attended to

the operation of these respective medicines and could discover no bilious indication in the whole system."

Two of the five patients having died in a few minutes after being taken out of a hot medicated bath, "upon dissection the duodenum was found distended with putrid air; the other intestines empty except the colon, and rectum, in which latter there were indurated faeces; the whole viscera sound, the gall-bladder turgid, but not diseased!"

Mr. Davis does not state the symptoms of the "inflammatory fever with violent cramps," farther than that the patient complained of a "tightness of the abdomen with a costive habit." The "cholera morbus" was distinguished by "spasms of the praecordia, and cramps of the extremities with bilious lientery, and a copious discharge from the stomach of a green, yellow and dark, coloured bile." During his residence at Arcot, upwards of sixty patients labouring under these three forms of disease were admitted, and only two or three deaths ensued. The dissection of a case is given, where, it is stated, "*the bladder was most singularly contracted, and did not exceed in size a large nutmeg*, yet without inflammation, or any apparent disease, except its contracted state."

[*Mr. Thompson's account of it, at Arcot and Trincomallee.*] Mr. Thompson, Surgeon, who was also sent to Arcot at the same time with Mr. Davis, observes, "This disease is exactly the same as prevailed at Trincomallee in the months of April and May 1782, when the season was very hot, and chill, the winds blowing from the land, and reaching some leagues to sea. The weather here at present is the same as I experienced at Trincomallee." Mr. Thompson also gives an account of a dissection where "the gall-bladder was exceedingly distended with bile, so much so as to appear protruded some inches below the liver, and to contain near six ounces of bile. No marks of putrescence in any of the abdominal viscera. *The urinary bladder quite empty and contracted to the size of a walnut*; the stomach and duodenum both empty of bile, and no appearance of inflammation in any part of the intestinal canal or peritoneum."

To persons familiar with the progress of cholera during late years, there can be little difficulty in understanding and reconciling the apparent discordances in the accounts just quoted. Many instances of the common cholera would seem to have occurred at Arcot, as well as at Vellore, where, it has been conjectured, this form of the disease chiefly prevailed. Some cases seem to have commenced with a degree of febrile excitement, an occurrence which has been occasionally observed in the present epidemic; or perhaps, these cases might be properly referred to a species of febrile affection with cramps, of which we have a very distinct history by Mr. Anderson, who observed the disease at Ellore in 1794, and styled it a "Causus;" lastly, that which Mr. Davis characterises as a "spasmodic affection of the nervous system distinct from cholera morbus," was no doubt the same low and dangerous form of the disease with which we have become too well acquainted in recent times.

The disease would seem to have lost its force at the period when Mr. Davis arrived at Arcot; for we find that the five cases, of the low form, which he first saw, had lingered from the 26th to the 29th; and few of the subsequent seizures proved fatal, which is quite analogous with our present experience.—Whether the bowels were less generally affected in that epidemic, or whether the means employed, and the prolongation of life for three days had given rise, in the cases in question, to faecal formations, and to their accumulation in the large intestines, it is not easy, from the scantiness of our information, to decide. But, if any doubt could be entertained of the cases described being cholera, such as we have lately witnessed, the testimony of Mr. Thompson to their identity is conclusive, if we admit that the Mort de Chien of Curtis, which he states to have prevailed at Trincomallee at the time mentioned by Mr. Thompson, was really cholera.

[*Cholera noticed in 1790 in the Northern Circars.*] It is stated in the Calcutta report, that "Cholera was again very prevalent and destructive in a Detachment of Bengal troops marching through the Northern Circars, in the months of March, April, May and June of 1790. "The disorder was characterised by precisely the same symptoms which marked the late epidemic. It began with violent pain and spasm in the stomach and bowels; which were followed by purging, vomiting, and all the signs of extreme debility."

[*Noticed by Dr. James Johnson.*] The next account we have of cholera is to be found in Dr. Johnson's work on the diseases of Tropical Climates. It does not appear in that work, that cholera was then epidemical, but it would seem to have occurred pretty frequently, both on shore, and on ship board, chiefly in the vicinity of Trincomallee. The precise date is not mentioned; it is concluded, however, to have been about 1804. Dr. Johnson does not detail the symptoms with much minuteness, contenting himself with those occurring in one or two cases, and referring generally to Curtis's description of the disease, a pretty satisfactory proof that they were the same. A seaman on awaking after a debauch, repaired to the deck, and there again fell asleep, during the chilly part of the night. "About 4 o'clock in the morning, he awoke with a shiver and left the deck, but was soon seized with frequent purging and griping, his stools consisting of mucus and slime. Nausea and retching succeeded; nothing being ejected but phlegm, and the contents of the stomach. His pulse was now small, quick, and contracted; his skin dry, but not hot. About eight o'clock in the morning he began to feel spasms in different parts of his body, which soon attacked the abdominal muscles, and threw him into great pain. During these paroxysms, a cold clammy sweat would be occasionally forced out, especially in the face and breast. The extremities now became cold; his features shrunk; the stomach rejecting every thing, which was offered, either as medicine or drink. The abdomen and epigastrium all this time were distended and tense, with incessant watery purging and painful tenesmus. By ten o'clock his pulse could scarcely be felt: his breathing was oppressed and laborious, his eyes sunk, and the whole countenance singularly expressive of internal agony and distress. The extremities were cold, shrivelled, and covered with clammy sweats. The violence of the spasms now began to relax: and by eleven o'clock, or seven hours from the attack, death released him from his sufferings." "This may serve as a specimen of the worst form of that dreadful disease, which has obtained the appellation of "mort de chien," or the "death of a dog."

[*Cholera supposed to have been met with at various times since 1787.*] Since cholera has become familiar to the older practitioners here, many, perhaps all of them, recollect having met with insulated cases of that disease, as well as of sudden, and often fatal illness, which they, at the moment, could not well understand, and which consequently, proved extremely embarrassing. Such cases would no doubt be attributed by different practitioners to different causes, and be referred to different heads of disease according to the various states in which the patients were seen; and, perhaps some of them were considered to be merely anomalous instances of common cholera; but late experience has now very generally led to the opinion, that they were in fact cases of spasmadic cholera. The records of the Medical Board throw no light on this subject. The number of cases of the description alluded to, which may have entered the military hospitals, could not however, in all probability, have been great, without attracting observation. It might perhaps be thought that the necessity of classing the cases in the official returns would have led to their being detected by a bare inspection of these documents; but in the absence of any nosological arrangement, which then distinguished the returns, no difficulty would be experienced in disposing of them.

Sporadic cases of spasmadic cholera might naturally produce the impression that some poisonous matter had been swallowed, which other circumstances would contribute to render sufficiently plausible; for, it is notorious, that intoxicating liquors are prepared by the natives, and clandestinely sold to the European soldierly, which contain the most deleterious matters, and which often produce fatal consequences to those who drink them. The symptoms attending such cases are frequently very anomalous and perplexing. Although the natives are less prone to debauch in spirituous liquors, they are yet not altogether to be exempted from the reproach; and the notion of a poison having been swallowed, would in their case be rendered still more probable, from such occurrences being not unknown amongst them, and from our ignorance of the nature of the poisons which are used.

It must be admitted however, that very few cases either of sudden death, or poisoning, or cholera, are to be found in the returns; but it will be presently shewn that no positive conclusion can thence be drawn against the existence of spasmadic cholera prior to the year 1818, when it appeared epidemically in these territories; and that some at least of the cases designated as cholera in former times, were clearly of the spasmadic species.

[Described by Mr. J. Wyllie in 1814.] Mr. John Wyllie, in his report dated 20th July, 1818, (page 68) makes the following remarks. "Before concluding, I think it proper to add, that although I have never, before the late occasion, seen this peculiar disease prevailing as an epidemic, yet I have at various times met with single cases of it in the most aggravated form, and I am much mistaken, if I have not recorded two particular instances of it in my journal of the 1st Battalion 24th Regiment for the month of June 1814, under the names of Paramuttee, and Madaramootoo, Sepoys." On referring to these cases, which have been preserved, Mr. Wyllie's conjecture seems to be fully confirmed: The first case is thus described. "Jaulnah, 19th June, 1814, p.m. $\frac{1}{2}$ past 2. He is in a state of the most extreme exhaustion, unable to move or speak, features contracted; eyes sunk, half open, and of a dull lustre; countenance bedewed with a cold sweat; pulse low, skin cold. Has been vomiting and purging very frequently since 7, A.M. and had all yesterday been affected by a watery diarrhoea;" at 3, p.m. he "is greatly distressed by excruciating crampy pains of the thighs and legs;" at 9, p.m. "complains of thirst, tongue moist;" on the 20th he "continues very low; countenance still of a ghastly appearance;" "alvine discharge copious, alone of ash-coloured slime." The patient recovered. - The next case is on the 24th June, 7, A.M. "Is in great distress from violent crampy pains of the muscles of the upper and lower extremities, but more particularly of the fingers; there is great prostration of strength; countenance ghastly; surface cold; pulse gone, much thirst. He had a very copious watery purging on him since 1 o'clock this morning. He attributes his complaints to having slept last night on the damp ground, and in the open air while on guard; at 9, A.M. "pulse just perceptible;" at 2, p.m. "slight giddiness, eyes red, says he has much appetite;" at 6, p.m. "one copious pale watery evacuation." This man also recovered, and both were treated with opium, and diffusible stimuli.

[Also by Mr. Cruickshanks in 1814.] Another incidental notice of cholera, has led to the discovery of that disease having prevailed to a remarkable extent, at the same time, and much in the same neighbourhood, as in the preceding instance. The late Mr. J. J. Duncan, in a report dated 1st September, 1819, after making some observations on the comparative advantages of dry and moist heat, externally applied, goes on to say, "In the month of June 1814, when the cholera appeared with great severity in the 1st Bat. 9th Regt. N. I. on its march from Jaulnah to Trichinopoly, I employed exactly the same plan of exciting heat, (heated sand), and found the greatest benefit resulting from it." "The disease in the 9th Regiment in 1814 resembled in every particular, (with the exception of the heat at the praecordia), the cholera at present so common, although it could not be called epidemic. The best behaved, the most robust, and the most active, were attacked and suffered equally as much as any patient I have seen with the epidemic cholera; out of a very considerable number of patients I only lost one man; the number I could not specify as I was ordered back to Jaulnah on duty about ten days after the appearance of the disease, and before the monthly returns were dispatched."

On referring to the returns of that corps it appeared, that in the month of June, 1814, ninety-nine cases of "bowel complaint" were entered, of which fourteen proved fatal; and about sixty cases of the same disease were admitted in the succeeding two months, of which however very few died. As these returns made no allusion to cholera, and as they were signed by Mr. Cruickshanks, a reference was made to him for information, respecting the preceding observations of Mr. Duncan, which has drawn forth the very valuable report, inserted at page 234, and bearing date the 17th June, 1823. It now appears, that a brigade of two Battalions of N. I. marched from Jaulnah on the 29th May, 1814, and that about the 10th or 11th of June a disease broke out in one of the Corps, which there can be no doubt was the spasmodic cholera. "When taken into hospital," Mr. Cruickshanks observes of the first cases he saw, "they exhibited all those symptoms now so well known, of persons labouring under the advanced and fatal stage of epidemic cholera; the skin cold, and covered with cold perspirations; the extremities shrivelled, cold, and damp; the eyes sunk, fixed, and glassy, and the pulse not to be felt. These persons all died, and I find, on referring to such notes as I have preserved, that influenced by consideration of the vascular collapse, and total absence of arterial pulsation, I had denominated the disease asphyxia. Many sepoys were brought into hospital in circumstances approaching to those above detailed. Of them, in a considerable proportion, the disease terminated fatally. Thus the cases which I first saw of this malady, in the aged among the camp followers, differed in no respect from the worst cases of that

affection since so well known under the name of spasmodic cholera. That name however I did not adopt, neither in my public reports, nor in the private notes which I took at the time. In this I was chiefly influenced from considering the nature of the matter ejected by vomiting and by stool, which in cholera is said to consist of bile, but *which in these cases was aqueous or mucilaginous.* Besides it was evident that the diluent treatment, recommended in cholera, could never be applicable to such a disease as that with which I had to contend. I continued, therefore, to employ in my reports the term "bowel-complaint," both because I found it in the hospital books on joining the corps, and because, if it conveyed no very precise idea of the malady which it was meant to designate, it was at least an appellation whence no erroneous impressions could be derived."

This paper by Mr. Cruickshanks is of great importance, *in as much as it evinces that cholera did exist to an extent not hitherto suspected to have occurred at so recent a date; and also, that even under these circumstances, no trace of it is found in the public records, for unless we had been guided by the incidental remark of Mr. Duncan, made five years after the occurrence, and had most fortunately been able to refer to Mr. Cruickshanks, the medical returns of the corps never could have led to a knowledge of it.* Hence, as already observed, though cholera very rarely appears in the sick returns of former times, *it is by no means to be thence inferred that it did not then exist.*

But this paper is also peculiarly valuable, as shewing that the cholera assumed, on that occasion, one of those singular and unaccountable features which it has frequently manifested in the present times; for, after enumerating various striking atmospherical vicissitudes, change of food, and many other predisposing, remote, and exciting causes of disease, to which the Brigade had been exposed, Mr. Cruickshanks goes on to observe, "To none of these causes of disease which I have enumerated, did the natives themselves attribute the sickness and mortality which prevailed; and on considering that of two Battalions composing the Brigade, alike exposed to all those causes, *one only* suffered from the epidemic, *the hospital of the 5th N. I. exhibiting not a single case of analogous disease,* those adduced can only be regarded in the light of remote, or predisposing causes; while, something or other acting exclusively on one Battalion must be sought for as instrumental in exciting the malady." We shall have occasion hereafter to revert to this particular subject; at present it is mentioned as shewing that cholera did, even then, manifest one of the most curious of its features, namely, that of two bodies of men, apparently under similar circumstances, one shall be attacked by it, and the other shall escape.

[*Mr. Hay considers it to be endemic in Travancore.*] It would also seem, by the subjoined extracts of reports from Mr. Staff Surgeon Hay, that cholera, in a form nowise different from the spasmodic or epidemic, is endemic in the Travancore country, and that he regarded the disease which appeared there in October, 1818, to be this endemic, rather than the epidemic, whose approach from the northward he still contemplated. On the 19th November, 1818, Mr. Hay writes; "the spasmodic cholera I am happy to say abates; the last seven days not having afforded more than thirty-six cases at Quilon, and there has been no casualty here in that time; but the Vythians, who arrive from the country for instruction and medicines, report the deaths of almost all attacked." After acknowledging the receipt of some medical supplies he continues, "I trust to be able to make a noble stand against the *epidemic* when it arrives; what I have had to encounter recently I hold to be the *endemic* Veshoo-ugeka, or Neer-comben, if not of the Malabars, certainly of the Travancorians, which is perfectly familiar to all here; committing frequently great mischief, and sometimes (25 years since) desolating the country. Then, thousands are said to have died of it; the Vythians fled from it as a plague, and no one, who has not early succour from suitable medicines, is ever known to recover;" "the description of the Veshoo-ugeka tallies in every particular with that of the spasmodic cholera; and whether the epidemic reaches us or not, the country will have reason to be thankful for instruction and remedies they never might have had, unless the dangerous inroad of the epidemic had been apprehended. In May last at Trevanderan, the capital, one hundred lives were sacrificed to this Veshoo-ugeka (poisonous air); some of the servants of the palace were seen by Mr. Provan's Assistants, and saved, but the villagers around, having no assistance, died to a man." Again, on the 24th December, 1818, Mr. Hay writes; "The Neer-comben, which signifies gush of water by stool, the effect of the disease, and its synonyme Veshoo-ugeka, or

poisonous air, its imputed cause, which are the vulgar and scientific designations of our present spasmodic cholera, has been very prevalent amongst the troops, their families, and followers. In Quilon I have treated upwards of 120 under the spasmodic cholera, and of the inhabitants a considerably greater number, with complete success in every case, where application was made within six hours; and hundreds have been saved by the use of the remedies I have distributed throughout the country. This shews unusually, for be it remembered that to the central parts of the Travancore coast, and parts quite adjacent, so far as my reports inform me, the *endemic* has been principally confined, and it is of this I speak; but the *epidemic* also now rapidly progresses southward, having already at Cochin yielded Mr. Mather some hundreds of patients, and at Allepy about 30 per diem are taken ill; as it nears us, I become more apprehensive that the mortality will be great, for although medicines, with ample instructions, have been distributed to 140 Vythians and others in the country, yet from the experience I daily have of their general inattention, I much fear that when the day of visitation and trial arrives, the sick will be found too often left to their fate, altogether unassisted." Mr. Hay goes on to state, that in some villages where there was no medical aid, from three or four to ten people were dying daily of the *endemic*; and, talking of the zeal of the Vythians, he observes, "but when the same malady (spasmodic cholera) was *epidemic* here 34 years since, they ran from their charge, under the persuasion that the disease was contagious, for many died, and numbers in one family."

There can be no doubt, however, that the disease described here as an *endemic* was, in fact, the epidemic cholera of other parts; and no particular manifestation of it took place afterwards at Quilon in regular course from Cochin and Allepy, as seemed to have been expected by the Staff Surgeon, nor, indeed, until July and August following. The progress of cholera as an epidemic along the western coast, however, was much less regular than in other tracts, which may perhaps be attributed partly to the geographical peculiarities of that coast, and partly to the disease being in some degree endemic, which would not only accelerate the invasion and march of an epidemic of the same nature, but also render it difficult to fix the precise dates of its appearance.

[*Epidemic Attack of Cholera in Travancore, about 1790, and in the Ceded Districts about the same Time.*] Mr. Hay mentions in the first letter, that Cholera committed great ravages in the Travancore country "25 years since," and in the 2d letter that "it was epidemic 34 years since;" either of these dates, supposing that there was only one visitation meant, would prove the existence of cholera, epidemically, at a period considerably anterior to 1787, and of course anterior to the instance in the 1st Battalion, 9th Regiment; and the whole communication shews that the disease is at no time of rare occurrence in that country. There is a very fatal form of disease also known in Travancore, called "the red eye sickness" by the natives, which is evidently a modification of cholera. Mr. Superintending Surgeon Duncan (page 110) also observes, "I find the old inhabitants of Bellary are acquainted with this disease, and inform me that it raged here about 30 years ago with great violence. This was succeeded by a famine, for want of inhabitants to cultivate the country."

Having, in the preceding desultory remarks, attempted to trace the existence of cholera in India from a very remote period, down to that of its epidemic appearance in 1817, sometimes coming as a pestilence upon the land, at others visiting only particular tracts; and having also attempted to shew grounds for inferring, that we are not acquainted with all the instances of its epidemic visitations, nor by any means aware of the extent of its occasional or sporadic appearances, it only remains to refer the reader to the valuable reports of the Bengal and Bombay Boards, for information respecting its late march through the respective territories of those presidencies; to Mr. Orton's separate work, for many interesting particulars of its appearance here; and to the narrative at the first page of this report, for an account of its progress through the Madras territories. This narrative has been compiled from official reports; and, as it is intended to exhibit the history of the disease, as a sort of memoir to the map which is prefixed, it has been as much as possible divested of all medical reasoning. It is not intended to enter into any discussion respecting the forms of cholera, or the diseases supposed to have been cholera, which may be thought to be described by European writers of ancient, and modern times, as having prevailed in Europe.

[*Nosological Remarks.*] Cholera has generally been classed by Nosologists under the

head of Fluxus; but Cullen, though retaining the name, which he understands to signify "a flux of bile," and defining the disease to be so, or of "a bilious humour," places it in his class, Neuroses, and constitutes it a genus of the order, Spasmi. Dr. Good, in his late valuable work, the Study of Medicine, retains the generic term Cholera, which he justifies on the ground that the "bile is morbidly affected in its secretion, either in quantity or quality;" and he places it in the class Cæliaca, or diseases of the digestive function, and in the order Enterica, or diseases affecting the alimentary canal.

[*Names given to Cholera by the Hindoos.*] The quotations which have been given from Hindoo writings, shew, that cholera, or at least, two diseases resembling it, are also there classed, either under the head of nervous diseases, or of disorders of the digestive organs. The native practitioners know the disease by the name of Vishuchi, or Vishuchiki; but the people in general designate it only by two words, signifying in their respective languages, *vomiting and purging*. The term "Neer comben," mentioned by Mr. Hay, as being in use with the natives of Travancore to express the disease, does not appear to be known to the natives of the Coromandel coast. [Mordixim.] The word Mordixim, mentioned by several modern authorities, is incidentally introduced by Bontius in his description of the Hog stone, who says, that "it (the Hog stone) is infused in wine for the Cholera which the Islanders, (Malays) call Mordexi." Sonnerat has been accused of translating, or transforming this word into Mort de Chien; but independently of there being no such phrase in the French language, it is manifest, from the quotations already given, that Mort de Chien was in current use among our soldiers and sailors at the time Sonnerat wrote his book: he does not apply it indeed to cholera, but to an indigestion or cholic, in which sense it is in current use with the Portuguese at this day.

[*Generic Name.*] The generic term, cholera, being consecrated by universal, and almost immemorial use, it would not, perhaps, be proper to reject it, even could we propose another, demonstrably better; or prove satisfactorily, that bile, either in its quantity or quality, has no connexion whatever with the cause of the disease; but the specific terms may admit of some observations. We have had no other method in this country of distinguishing between the two forms of the disease, than by retaining the old, and, according to Dr. Good, the pleonastic appellation of *Cholera Morbus*, signifying that form wherein bile appears early, or from the first in the discharges from the alimentary canal, and in which the circulation is not remarkably depressed; and by applying the adjuncts *spasmodica* or *epidemica* to the second, or that form wherein bile, in common with the other glandular secretions, disappears, and where the pulse sinks, or ceases to be felt.

[*Specific names.*] The specific term, spasmodic, applied to the Indian cholera, has met with very serious opposition; for, if restricted to the affection of the muscles of voluntary motion, it implies a symptom of very minor importance, which in a great proportion of cases indeed, does not at all occur; and of which the existence in other parts of the system, cannot by any means be held as uncontestedly proved. The term "cholera epidemica" is that which has been chiefly used of late, especially in official papers, and hitherto it has been sufficiently understood; but it is obviously adapted for temporary application only. It may therefore be allowable to substitute a term which, it will be attempted to shew, imports an unfailing diagnostic of this species of cholera; namely, the *sinking* or *arrest* of the circulation; and, accordingly, to call it cholera asphyxia, using the word asphyxia only in its restricted sense, that is the stoppage, or suppression of the pulse.

This proposed specific term, asphyxia, will, it is presumed, designate the disease unerringly; for, as far as our knowledge of it either from history or observation hitherto extends, there appears to be in all cases an evident tendency to a sinking of the circulation, an apparent arrest of it in the vessels of the extremities, if we may judge from the absence of pulse, and from the effect of venesection, in every instance where the complaint is not early cut short by art; and, especially, an arrest of it in every vessel accessible to the senses, in all fatal cases, at a period before death, comparatively more remote than is known in any other disease.

Periscope ;

OR,

CIRCUMSPECTIVE REVIEW.

"Ore trahit quodcunque potest, atque addit acervo."

I.

- I.** A GRAMMATICAL INTRODUCTION TO THE LONDON PHARMACOPÆIA AND PREFACE ; OR THE STUDENT'S SELF-INSTRUCTOR, &c. By S. F. LEACH, 1828.

- II.** SELECTIONS FROM GREGORY'S CONSPECTUS MEDICINÆ THEORETICÆ, AND CELSUS DE MEDICINA, &c. for the Use of Medical Students, &c. By S. F. LEACH, 1831.

- III.** A LITERAL TRANSLATION OF THOSE PARTS OF GREGORY'S CONSPECTUS AND CELSUS WHICH HAVE BEEN FIXED UPON BY THE COURT OF APOTHECARIES FOR THE EXAMINATION OF CANDIDATES. By S. F. LEACH, 1831.

WHAT is the object of the Court of Apothecaries in examining candidates in Gregory and Celsus? They will answer, of course, "in order to ascertain the candidates' proficiency in the Latin language." The Court could not take a more effectual method of defeating their object, than by specifying the portions of the works in which the youth is to be examined,—or indeed by specifying any work. The specification in question leads to the study of only the parts pointed out—and hence it is that we have literal and other translations of those portions, so managed and "made easy," that a sharp pupil may in a month or two get them all by heart, yet knowing hardly any thing of the language in which he is examined! This system is much worse than that adopted at the College of Physicians; for there the works of Celsus and Sydenham lie on the table, and the candidate knows not what page may be

opened for his translation. Besides, the examination itself is in the Latin language, which affords some farther security against want of classical education.

The author of the works, at the head of this article, has done all in his power to facilitate the object of the candidate for a license at Apothecaries' Hall.

"I now present to your notice a literal translation of that portion of the Latin language, which has been selected, by legal authority, for the preliminary examination of candidates in the medical profession. The student desirous of SELF-INSTRUCTION may confidently anticipate efficient assistance; and both teacher and pupil may calculate upon the diminution of labour, and the economy of time. Use freely what is here offered; but depend upon the *security* of your object *only* in a thorough knowledge of the rudiments and structure of the language you are required to understand."—*Pref.*

Mr. Leach is too well acquainted with the actual state of things, not to be aware that most of the candidates in question will attend but very little indeed to the *latter* part of this advice; and that they will be very ready to accept all the advantages of diminution of labour and economy of time, which are promised in the beginning of the passage. We blame not Mr. Leach. The Court of Examiners have, as it were, advertised a contract for the cheapest latinity of a candidate—and if Mr. Leach has been a successful bidder, the more fortunate he! Of all the translations of Celsus and Gregory, Mr. Leach's is the most literal—indeed it supersedes the dictionary in most in-

stances. We shall introduce a specimen, by which the reader will be enabled to judge.

"As agriculture promises (promittit 31) aliments to healthy bodies, so medicine promises health to sick bodies. This medicine never indeed is not (Hæc nusquam quidem non est, this every where exists): since even the most unskilful nations have known (noverunt, nosco) plants and other things efficacious (prompta) in the assistance of wounds and of diseases. However it was cultivated among the Greeks a little earlier (aliquanto magis 19) than among other nations; and not even among those, from the first origin, but a few ages before us; inasmuch as Æsculapius may be celebrated the most ancient author. Who, because he cultivated this science as yet rude and common, a little more acutely (paulo subtilius 19) was received (receptus est, recipio 71) into the number of the gods: then his two sons, Podalirius and Machaon, having followed (secuti 45) the General Agamemnon to the Trojan war, brought (attulerunt, affero 31) no moderate (considerable) assistance to their fellow-soldiers."

In the preface to the second work at the head of this list (the Selections) the author cautions the student against the plan of committing to memory literal translations, or "interlineary versions," which plan would consume more time than would be necessary for obtaining a thorough acquaintance with the authors selected for examination, besides being attended with no small degree of uncertainty. In the following passage we entirely agree.

"The Editor of this little Work strongly cautions the Student from relying upon any of the facilitating Methods of Instruction so speciously advocated in the present day. An experience of more than twenty years sanctions the assertion, that the only legitimate, successful mode of learning a language, is by the medium of the rudiments. Let the declensions and conjugations be well fixed in the memory, and the structure of a language may then be explained, and readily understood."

We may remark that these two volumes are, one the Latin text, the other the translation of Gregory and Celsus, and are, no doubt, well calculated to facilitate the student's labours and acquirements in this department. We nevertheless object to the system adopted by the Court of Examiners, as leading necessarily to these royal roads to latinity.

The Grammatical Introduction to the London Pharmacopœia is free from all objections, and is a very useful little book for smoothing the crabbed technicalities of that Alcoran of our therapeutical faith.

II.

CASES OF ILIAC ANEURISM SUCCESSFULLY TREATED BY OPERATION.

The operation of tying the external iliac artery for aneurism of the femoral, or of itself near the femoral, has been highly successful. Theory appears to have offered a true explanation of the fact, in the space presented by the vessel for the formation of an efficient coagulum, and if this be not the whole truth, it is a very material part of it. Two additional cases of this description have been recently placed on record, and as the operation, on each occasion, was performed in the theatre of a metropolitan hospital, the particulars are free from suspicion of colouring. The first case to which we shall refer, occurred to Mr. Bransby Cooper; both are reported in the London Medical and Physical Journal for January of the present year.

Case 1. Hans Jacobs, æt. 44, a Dane, a sailor, who in 1809 was in the Naval Hospital at Deal, with dysentery, and in 1825 in hospital at Bombay with a fever, but who had since been in good health, was admitted into Guy's Hospital, 16th July, 1831, under the care of Mr. B. Cooper. Below Poupart's ligament, towards the inner part of the left thigh was situated a large pulsating tumour, of an oval figure, the long

axis extending in a horizontal direction, being rather broader from side to side, than from above to below. The circumference was solid; the central part prominent, and indicating fluid; tense; admitting of being considerably lessened in size by pressure; but again enlarging and extending upwards over Poupart's ligament. The skin was not discoloured, but traversed by large veins, which extended round the limb towards the hip. The whole limb was swollen and enlarged, the temperature increased, the veins congested, and the leg oedematous. His health was impaired; pulse 66, natural; countenance sallow, anxious.

Whilst working at the pumps on ship-board on the 2d April, he suddenly felt, without using any extraordinary exertion, a sensation in his left thigh, "as if the limb had been taken clean off by a shot," attended with severe pain in the lower part of the thigh, calf, and ankle. Four or five days after this the swelling commenced, when the pain diminished, but was reproduced on his attempting to stand on the limb. For two months the tumour increased little, during the last three weeks it had done so with rapidity, and been accompanied with severe pain, especially about the knee-joint, as well as on the outer part of the thigh. Some aperient medicine was given, and on the 19th the following operation was performed by Mr. Bransby Cooper.

Operation. "The patient was placed on a convenient table in a horizontal position: an incision was made, commencing half an inch above and to the outer side of the external abdominal ring, and extending outwards to within an inch of the anterior superior spinous process of the ileum, in a slightly crescentic direction, the convexity of which was downwards towards Poupart's ligament, and the concavity upwards towards the abdomen. The object to be obtained by this incision was to expose the tendon of the external oblique muscle, but in this case it was so covered with adeps that it required several incisions before it could be completely cleared. This done, by the next incision the tendon of the external oblique

was divided precisely in a direction corresponding with the course of the first incision. This semilunar edge of the tendon of the external oblique was now lifted up by an assistant, in order to expose the internal ring; but, from the great development of the muscular fibres of the internal oblique, where they arise from Poupart's ligament, this object could not be effected, the ring being completely concealed by them: it was, therefore, necessary to pass a director underneath these muscular fibres, and separate them from their origin by means of a blunt-pointed bistoury.

The spermatic cord and internal ring were now exposed. The spermatic cord was then drawn upwards and inwards by an assistant; the fore-finger of the right hand was passed into the internal ring, in order to separate the peritoneum from the iliac vessels, by pressing it upwards into the abdomen. The fascia which connects the iliac vein to the artery on the inner side was next separated, in order to make a free passage for the aneurismal needle, which was then passed from within outwards around the artery, armed with a silk ligature, of double the usual size.

The object in using a large ligature was to prevent a too quick separation before so large an artery is properly secured by the adhesions on its internal coat. From some experiments, I have found that a very fine ligature will ulcerate a large vessel so quickly, that it will sometimes cause, and at all times lead to the danger of after-hemorrhage.

Before the ligature was tightened, the artery was brought to view; a precaution which in this instance was particularly necessary, as a small branch of the external spermatic nerve was seen taking its course along the front of the vessel, and this had to be carefully separated, to prevent its being included in the ligature, which was afterwards tightened. The pulsation in the aneurism immediately ceased, and the size of the tumour lessened at least one third: the edges of the wound were then brought together; one suture was employed to maintain their apposition, and the remainder was secured with adhesive plaster and a dossil of lint. The

operation lasted twelve minutes from the first incision to its conclusion."

Little in the after-symptoms or after-treatment requires particularization. Under warm flannels and gentle friction the temperature of the limb was maintained, or nearly so—distressing pain in the thigh was relieved by opiates—subsequent symptoms of local and general irritation by fomentations, opiates, aperients. On the day after the operation the tumour was merely half the size it had been previous to the operation—on that day the patient was allowed some white wine, and on the third day a mutton-chop—on the twenty-second day the ligature came away. After this the wound healed, and health is re-established. It deserves remark and attention that, when convalescent, the patient was attacked with violent inflammation in the right testicle, and subsequently with inflammation, less acute, of the left. The phenomena are to be explained, we presume, by the irritation and implication of the spermatic cord, and the continuity between the vasa deferentia. The case is highly satisfactory, and creditable to Mr. Cooper.

Case 2. The following is related by Mr. Guthrie, and formed the material of a clinical lecture to his pupils. We are happy to perceive that this able and eminent surgeon is frequently in the habit of communicating to the public his observations and experience. If all of the same standing made their opportunities as available to others, as Mr. Guthrie endeavours to make his, it would neither be amiss for science nor themselves. But we have done.

John Hicks, æt. 28, the subject of the case, presented an aneurism, situated above Poupart's ligament, which was raised by the lower part of the tumor, and by its indentation seemed to divide it into a large and a small portion, the former below, the latter above, and appearing to occupy a space equal to the lower half of the external iliac artery; it was as large and as prominent as a good sized orange: the pulsation very strong and distinct. There was a slight bellows-sound in the heart,

and though the patient was bled thrice in the month preceding the operation, the pulse remained generally above ninety, and sharp. The aneurism as far as he could recollect or judge, had taken place from a strain. The situation and size of the tumor rendering it probable that the greater part of the external iliac, if not the whole, might be unsound, Mr. Guthrie decided on performing the operation so as, if necessary, to place the ligature on the common trunk of the right iliac arteries. We cannot do justice to the operator, but by transcribing his own description of the operation.

Operation. "I began by making an incision in the side of the abdomen, extending from about an inch within the ninth rib, and about one inch above the level of the umbilicus, to nearly an inch within the ileum. This incision was six inches long, and the integuments, superficial fascia, and the external oblique tendon, were divided as rapidly as possible, until the fibres of the internal oblique were fairly exposed: these, being of uncertain thickness, were next divided cautiously, until the tendinous expansion of the transversalis was brought into view, going to form the sheath of the rectus. The lower portion of this was muscular, but I divided the tendon immediately above this part very easily, introduced a director upwards and downwards, and cut the transversalis upon it in both directions. The peritoneum was now exposed, covered, however, still by the fascia transversalis, which in places fastened and bound it down so firmly as to require it to be divided with greater caution by the knife and director. This obstacle being removed, the peritoneum rose and fell with the intestines on each motion of the muscles of the belly, shewing how carefully the preceding steps of the operation must be done to avoid doing it an injury, which at this part might be fatal. I now separated the perineum from the fascia transversalis and transversalis muscle, and endeavoured to pass my hand behind towards the spine, between the ribs and the ileum; but I found there was not quite room for it to pass easily: I there-

fore enlarged the incision as much downwards as the proximity of the aneurism would permit, and divided the transversalis tendon upwards for about half an inch more. As it was here very firmly passing across, I raised the part to be divided on my two forefingers, and desired an assistant to divide it with a pair of blunt scissors : in doing this, a small fold of *peritoneum* was caught and divided, to the extent of near a quarter of an inch. It was, however, out of the way, and my hand could now pass with perfect ease, although it required to be done with the greatest caution, raising and separating the peritoneum before it, and passing over the psoas muscle, until my forefinger rested on the common iliac. It was only at this part of the operation that assistance could be given by any one : Mr. WHITE now, however, took charge of the bag of peritoneum containing the intestines, and raised it and them sufficiently to enable me to see the point of my finger resting on the vessel and on the bone beneath. I could now feel, and indeed see, the common iliac and its bifurcation into the internal and external iliacs, and it was as easy to have placed a ligature on any one as on the other of these three arteries, and more particularly on the common trunk. The external iliac appearing, however, to be sound, and of its natural size and appearance, an inch below the bifurcation, I cleared it with a blunt knife, and passed a ligature around it from within outwards, made of two strong threads of dentist's silk, well waxed. I then cut away one end, laid it straight, and allowed the peritoneum and intestines to fall back into their places. If I had a doubt about the soundness of the external iliac, I should have tied the common trunk ; but as it was, and as I could with propriety place the ligature an inch below the bifurcation, I did it, and of course gave my patient an additional chance of escaping mortification.

The wound was first brought together by three strong ligatures passed through the integuments, leaving the muscular wall to itself ; and as these did not close the wound, four stitches through the skin, of a single thread each, were ad-

ded in the interstices, which brought the edges of the whole line of incision into contact. The adhesive straps were then applied, and a compress was retained by other straps and a flannel roller. The legs were both raised by a pillow under the knees, the body bent, and the patient inclined towards the affected side."

Mr. Guthrie remarks, *en passant*, that the peritoneum which was exposed and accidentally wounded had a reddish colour and slight roughness of its external surface, which readily distinguished it from the leaden colour of the peritoneum covering the intestine. We pass to the events that succeeded the operation.

"The temperature of the limb previously to the operation, on Saturday the 19th of November, was 102 ; the pulse 92. On being put to bed, a hot bath was applied to the foot, and two persons were directed to rub the foot, leg, and thigh, constantly under the bedclothes, which they did until midnight. At 8, p. m. the pulse was 106, the temperature 92. At twelve, on Sunday, the pulsation of the femoral artery was distinguishable in the middle of the thigh, and he was free from pain in the limb, which I considered to be a most important sign of safety from mortification ; for you may lay it down as a general rule, that, when a limb is going to mortify after such an operation, there is always great pain in the heel, calf, and even in the thigh, whilst at the same time there will be a mottled appearance of the skin, which together are the forerunners of an inevitable and generally fatal mortification. In the evening, the pulsation of the posterior tibial artery was just discoverable at the heel ; and on the Monday, or forty-eight hours after the operation, I considered the danger of mortification to have passed by, and that of inflammation to have commenced. The pulse rose to 134, was jerking, but neither full nor hard. I had him bled to nine ounces, when the pulse diminished in volume nearly three fourths, and he felt himself relieved from an oppression he could not describe before. The abdomen was a little swelled and tympanitic, but not painful any where on a fair degree of pressure.

An enema, with Ol. Ricini, was given, and repeated with Ol. Terebinth., with full effect. In the evening the pulse was 140, and very peculiar, there being seventy strong beats, and seventy short feeble ones following them; the countenance a little anxious. I had him bled, with my finger on the pulse, until twenty-two ounces were drawn, when he became faint, a profuse perspiration came over him, and the limb lost in temperature."

Mr. Guthrie was anxious to avoid syncope, and did avoid it, but during the eight subsequent days 107 ounces of blood were abstracted, being cupped, bled, and firm till the last. The man also took colchicum and digitalis till the pulse intermitted, was limited to four ozs. of bread and tea daily for the first fortnight, to eight ozs. with a pint of milk for the second. The ligature came away on the 28th day. On the 13th December, the tumour was evidently softer, and increasing towards the line of incision, into which it emptied itself next day, with diminution of size; it still continues to discharge slightly. The man now takes good diet, and, as far as the operation is concerned, it has succeeded. Mr. G. observes that, during the operation, he laid bare one inch of the common iliac artery, and he felt confident that he could, with ease, have placed a ligature on the aorta, by a farther extension of the external wound for half an inch. Mr. Crampton, we believe, has made an observation of a similar description. In the present instance, Mr. G. attributes his success to the extent of his incision. Mr. North, who saw the operation, speaks highly of the coolness and manual dexterity with which it was performed.

We direct attention to one striking point of contrast between the case of Mr. Cooper and this. In the former, wine was given on the day succeeding the operation, and the patient may be said to have been supported; in the latter, depletion was used boldly and antiphlogistic regimen severely; yet both individuals did well. But Mr. Cooper's patient was more advanced in age, had suffered sickness, and probably been intemperate—debilitating circumstan-

ces; whilst Mr. Guthrie's patient was young, and apparently vigorous. We regret the absence of particulars respecting the manner in which the disease commenced; being ignorant of this, we can form no conjecture on the ultimate event. In another part of this Number, will be found the particulars of a case of aneurism of the axillary artery, for which the subclavian was unsuccessfully tied by Mr. Brodie.

III.

CASE OF FUNGUS CEREBRI, WITH THE DISSECTION.*

FUNGUS of the brain, after injuries or operations, is an affection that has excited some attention, much perplexity, and is still involved in a great degree of obscurity. The explanations hitherto offered of its nature are unsatisfactory, the actual condition of organization or disorganization which attends it unknown, its treatment dubious. We are reduced to the collection of facts to determine the truth, if the truth is to be determined, on these several questions. We, therefore, notice the following cases, related by Dr. Armour.

Case. William Park, aged 15, was admitted into the Glasgow Royal Infirmary on the 29th Nov. 1816, at 9, p.m. At this time, Dr. Armour was surgeon's clerk, received, and subsequently watched him. At 3 o'clock in the afternoon, he had received a kick from a horse on the frontal bone, immediately above the right eye. A large depression of the bone was produced; he was stunned for a little while, but soon recovered his senses and recollection. He was bled to $\frac{3}{4}$ x. previous to which the pulse was 120, and immediately afterwards fell to 90. Some time afterwards he vomited slightly, the pupils were dilated, and he had two or three convulsive fits. On admission, the bone was found

* Glasgow Journal, No. 16. Nov. 1831.

depressed to a considerable extent, broken into many fragments, with some cerebral substance lying on their surface. A piece of the adjacent bone was removed by the trephine, the fragments taken away, and the fracture found to extend downwards exactly to the orbital process of the frontal bone; the dura mater and other membranes were lacerated to the extent of an inch and a half, and spiculae of bone driven into the brain. These were removed; a coagulum then occupied the centre of the wound; the edges were brought together by stitches; straps applied, with an aperture for blood to escape, and a piece of lint and a handkerchief placed over all. *V.S. ad 3xv.* He moaned occasionally, but was quiet, and at 11 p.m. answered quite collectedly, and said he had little pain in his head. *Dose of calomel and rhubarb, to be repeated in two hours, and in the morning if necessary.*

30th. At 5, a.m. he complained of some pain in the head, with a sharp pulse. He was bled to $\frac{3}{4}$ xij. after which he had a fit but immediately recovered, and slept. At 8, a.m. he had had two stools—pulse 100, firm. *Rep. bolus.* At 10, p.m. *V.S. ad 3ix.* He became faint and vomited. At 3, p.m. the pulse was 120, sharp; skin dry and warm. *V.S. ad 3xij.* *Liq. amm. acet.* $\frac{3}{4}$ ss. o. & horæ. After losing the blood he was seized with convulsions, which soon ceased, but left him delirious, and very restless. The dressings were removed; the wound adhered where its edges were placed in contact, and a coagulum was formed over its centre. *Rep. boli ij.* *Hirud. x. temp. dextra.* *Vesicat. nuchaæ.*

Dec. 1. The restlessness left him after the last bleeding; to-day the countenance is healthy, pulse 124, soft. *Hirud. x. tempor.* 1, p.m. Complains; pulse 440. Wound looks well, coagulum has come off, and laceration of dura mater exposed; already an attempt at granulation on the surface, but at one point a small projection, apparently cerebral, of about the size of a common bean. *Mag. sulph.* $\frac{3}{4}$ ss. *p. r. n. repeatend.*

Dec. 2. The cerebral tumor has enlarged astonishingly: it is of the size of

a pigeon's egg, and is distinctly seen passing out from the wound in the dura mater. It was handled without occasioning any uneasiness, and was torn away on a level with the cranial bones, without any perceptible effect. Health improved—pulse nearly natural—expression good—sleeps naturally.

On the 4th, the tumour had increased very much in size, and the health was not so good. The fungus had been shaved off without success, and the surgeon now began to dig it out from considerably lower than the level of the cranium, and, allowing the blood to coagulate, was in hopes that an organizing action might take place between it and the cut surface of the brain, and that granulations would form. Any reason is better than none, but a good one is better than a bad. The practice was unsuccessful, for the coagulum having remained in situ for two days, was forced off by the fungus, which increased in spite of pressure, and the brain exhibited no healthy appearance. It was again shaved off by the scalpel without obvious benefit or injury. Powerful pressure was now resorted to, but symptoms of compression of the brain shewed themselves, and were removable only by the removal of the pressure. Caustics (argent. nitrat.) were applied, the bandages being only removed when symptoms of pressure were actually present; this plan was continued till the 20th day from the appearance of the fungus without benefit. The boy had hitherto been perfectly sensible; on the evening of that day he became insensible, convulsions came on during the night, and at 8 o'clock he died.

"Inspection. Before opening the head a very great difference was observed, betwixt the appearance of the fungus, and that which it had exhibited during life. Even to the last moment of the patient's existence, the cerebral matter was found, either protruding through the cranial opening, or on a level with it. Now, it had retired completely within the cranium, and the finger, when introduced, did not detect the existence of any such matter. On looking in at the opening, a deep cavity alone was observable. When the skull,

cap was sawed off, the chief, and most remarkable fact noticed, was, that the greater part of the substance of the right hemisphere was gone, its remaining surface being in a putrid-looking state. The substance of the brain, throughout, was softer and more pulpy than natural."

Dr. Armour makes some observations on the case, which we must pass by. He discusses the question of phrenology: it were well if he could first settle that of *hernia cerebri*. But we can find more room for facts than arguments, and the following are said to be facts.

"A man was brought into the Infirmary, a considerable time after the preceding, with extensive fracture and depression of the bone of the left side and fore part of the head, and injury of the membranes. The necessary operations were performed, and the fragments removed; the antiphlogistic treatment was adopted, as the symptoms seemed to require, although I do not remember that he was bled; on the contrary, as far as my memory bears me, he was not. After a time, a fungus made its appearance, which was treated by pressure and the application of burnt alum, which acted as an escharotic. The progress was bad, and ultimately the appearances became so formidable, that I well remember, the surgeon (not the one who treated the former case,) at the visit, stopt at the bed-side, gazed at the patient, who was apparently in a state of insensibility, and passed on. I asked, 'What is to be done?' His answer was, 'Let him alone, he is dying.' In the evening, his friends, also, who had come from the country, were so convinced of his approaching dissolution, that they came to my room, to ask me where they should go to order a coffin, and when I went to bed, I had not the slightest expectation that he should see the morning. When I visited the ward, next morning, after breakfast, I asked the nurse, when he died. She answered, 'He is not dead, he has sat up in bed and has taken breakfast.' A hint was taken from Nature—no farther pressure or caustics were applied; simple dressings were laid on, and when I left the

Infirmary, for the Continent, to prosecute my studies, the cure was advancing, and the fungus gradually becoming more and more encroached upon, by the cicatrization of the adjacent parts. At my return, I was told he had left the house well as to the fungus, although, I think, it was added, that his mind was somewhat weakened; I have neither seen nor heard of him since. Another case, which subsequently occurred in the same hospital, which I did not see, but which was mentioned to me by the attending, and still a different surgeon, was the following. The frontal bone was smashed down in numerous fragments, which were mixed with the hair and brain. The bones, hair, and portions of the anterior lobes of the brain were removed, much cerebral matter was also subsequently effused and taken away with the dressings. Only simple dressings were employed, and the man recovered."

In one of these cases, the cessation of mechanical treatment certainly appears to have been succeeded by the cessation of the malady. But as mechanical treatment could not have produced it, and as, in many other cases, the fungus has proceeded without interference or with it, we must not jump to conclusions too hastily, or take one case for more than it is worth. We observe a circumstance of importance in the first case related by Dr. Armour. Bleeding, on four separate occasions, was followed by convulsions. This is a fact, and not an insulated one, to be remembered in the observation and treatment of the effects of injuries of the head. We make no further remarks on the subject at present.

[St. Thomas's Hospital.]

CASE 1.—*Aneurism of both Carotid Arteries—Operation on one Side—Result favourable.*

Peter Varner, æt. 65, applied at this hospital, April 7th, 1831, presenting

an aneurismal tumour of the right carotid artery, at the point of its division, which was the subject of his complaints, and principally attracted the attention of the surgeon. His report is, that a few days after Christmas, he first noticed a small swelling, possessed of pulsation, not larger than a pea, in the above situation, having carried a heavy load on his head a short time before, when he thinks he might have strained some part of his neck; but he is not conscious of having then received any injury. This enlargement has been gradually increasing in size, accompanied by more serious symptoms within his head, such as throbbing on that side, augmented at intervals, vertigo and confusion. Deafness of the same side has existed from childhood, but, on the left, has subsequently come on, and he hears now very indistinctly. The aneurismal disease has attained the size of a large walnut, and the pulsation of it is very forcible; pressure upon it is productive of considerable pain, and gives rise to increase of the unpleasant sensations within the cranium. Its growth does not appear to have been more rapid latterly.

He is of unusually short stature, and consequently short-necked. His employment has been that of a porter. He is stated to have lived regularly, and, though pallid in the countenance, has not looks of ill-health for a man of his years. Upon examination with the stethoscope, the action of the heart is found natural, that of the arteria innominata preternaturally strong, and, in the tumour itself, bruit de soufflet is plainly audible at each beat of the vessel. The pulse, when the man is quiet, does not exceed 88, but it is readily excited, as, at the time he underwent more particular scrutiny by Mr. Green, on the 8th, it was raised to 110, and was much more powerful than naturally. Tongue rather white, and clean at the edges. Bowels regular. Appetite good. His nightly rest has been often disturbed. Is capable of walking a long distance. Attacks of palpitation have been frequent, but never syncope. There is no cough nor dyspnœa.

April 15th. We cannot perceive any

alteration in the disease on the right side of the neck, excepting, perhaps, a slight decrease, probably from the state of quietude the patient has been preserved in; but, on the left, an incipient aneurism has been discovered in the corresponding portion of the carotid, small, and unattended by conspicuous or violent pulsation. Everything connected with the patient's bodily functions has been properly performed, and his mind is now prepared to endure the operation of tying the common carotid artery, which Mr. Green to-day accomplished. An incision, between two and three inches in length, was made on the inner side of the sterno-cleido-mastoideus muscle, and in the direction of its fibres, which commenced a short distance below the cricoid cartilage, and reached to the upper edge of the clavicle. The neck being remarkably short, accounts for the external wound not being longer. With a few gentle strokes of the knife, the muscular substance was brought into view, and here a superficial artery, which bled rather copiously, whereby the deeply-seated parts were obscured, was secured by ligature; then, by means of the sharply-edged handle of a scalpel, the cellular tissue was torn through, and, after some time, the sheath of the vessels was exposed, which lay far from the surface, the consequence of the shortness of this region. This was raised with the forceps and cut into horizontally; and, being in the next place further opened on a director, the carotid artery was more fully seen, but still, from the cause alluded to, not to the usual extent. Some branches of the n. descendens novi were visible on the external side of the sheath, but nothing of the great jugular vein nor par vagum internal to it. A large ligature was placed under the vessel, from without inwards, with a blunt-pointed needle, and tied firmly. One extremity was cut close to the knot, and the wound being cleaned, was dressed with adhesive plaster. Suspecting that the coats of the artery might not be in a perfectly sound state, Mr. Green chose a thick ligature. The effect of the latter upon the aneurismal tumour was a manifest and instantaneous diminution in size,

and in the force of pulsation, which was yet distinguishable. But the patient having been carefully removed to bed, in about an hour this had ceased altogether.* In the space of thirty minutes, the man was conveyed from his ward, the operation performed, and he was put into bed.

15th, 10 o'clock, p.m. Within the last few hours, respiration has become hurried and laborious, and the pulse 120, strong and bounding. About 9 o'clock, a slight convulsive state came on, and recurred in a less degree in the course of half an hour, after the patient had been bled to $\frac{3}{4}$ xx. by Mr. Green's order. He is now quiet, and the pulse much reduced in force, but not in frequency. Has taken nothing except barley-water, and has not felt great thirst.

16th, 12, a.m. Very little time has been passed in sleep, but the patient has endured no absolute pain, and complains not of uneasiness in the head; he has been restless, and is impressed with the belief that he shall die. Pulse now 120, rather full, and has regained considerable strength. Respiration has been frequent during the night and loud, and this state has not subsided—there is no cough nor flushing of the face. The inferior portion of the right carotid is seen and felt to beat with rather violent action, but no pulsating sensation is distinguished in the tumour, over which the integuments have become wrinkled and flaccid, nor in the temporal artery. A remarkable tenderness is exhibited on touching the part. In the great vessel on the opposite side, no increased force is perceptible; countenance undisturbed; no motion from the bowels; urine has passed freely.

12, p.m. Our patient is now asleep, but, having been unquiet, is lying with his head below the pillow—is breathing

easily, and not louder than natural—pulse has not changed during the day. One alvine evacuation has been procured by a dose of ol. ricini. At 2 o'clock Mr. Green visited him, and ordered him to be seen every six hours by the dresser, and the slops to be continued.

17th. He has enjoyed sleep for some hours, and acknowledges no pain within the skull. Some redness has taken place around the incision, with swelling, and, at 9 this morning, nine leeches were applied to the part by the dresser, and a poultice of bread afterwards. Pulse 104, reduced in volume, and soft—respiration not oppressed—bowels moved once this morning. The redness and tumefaction surrounding the wound being but little abated, Mr. Green directed 12 leeches to be re-applied, with the poultices, and prescribed—

Hydr. submur. gr. ij. Ant. tart. gr. ss.
Opii, gr. ss. M. 6tis horis.

In the evening, there was some difficulty of deglutition, which was painful, but unattended by cough. Some beef-tea was given, however, without inconvenience, as the patient had become low.

April 18th. His night has been tranquil, and the medicine exhibited regularly up to 6 o'clock, a.m. Pulse is 100, soft, and not fuller than the natural beat—respiration quite easy—bowels acted twice yesterday, but no stool has been to-day obtained. The poultice and strapping, which had become excessively foul from the discharge of pus and bleeding from the leech-bites, were removed from the wound, which is looking perfectly healthy, and is filled with granulations. Suppuration to a trifling extent has taken place therein, and the redness has nearly disappeared. A few short strips of plaster were put on as before, and Mr. G. ordered the beef-tea to be consumed according to circumstances. Pills of calomel, &c. to be omitted.

19th. About 9 o'clock last evening, he had some pain in the stomach, which, in a few minutes, was followed by strong efforts to vomit, but nothing was ejected. His bowels not having acted during the day, an enema was thrown up, and soon brought away a dark-coloured

* Some doubts are entertained upon this point, by those who watched the case as attentively as ourselves. We, however, carefully examined the part at the above time, in the presence of Mr. Green, who, to the best of our belief, holds our own opinion.

and very fetid stool, and the retching ceased. At 3, a.m. another evacuation of like character passed, and there was some little difficulty experienced in voiding his urine. This, however, endured but a short time. At 1, p.m. Mr. Green saw him, and, as some nausea remained, ordered—

Hydr. c. cretâ, gr. iij. Opii, gr. ss. b. d. Mist. sal. eff. 3ij. 4tâ q. h.

The wound is looking healthy, and a free suppuration is established. A feeble pulsation has been distinguishable for the last day or two in the tumour, which has been gradually decreasing.

20th. Has passed a good night—had no return of sickness, nor of difficulty in expelling urine, and expresses himself as quite well. One liquid motion of a healthy colour has come away. Pulse at 92, with rather less power than natural. Tongue clean. Expectorates a good deal of mucus, which effort, as well as that of deglutition, is effected without pain. The incision is healing, but continues to suppurate freely.

Takes the beef-tea, arrow-root in milk, and medicines.

May 19th. In the course of a few days the expectoration and difficulty of swallowing were at an end, and no unfavourable symptom presented itself up to the 24th day after the operation, with the exception of a temporary and slight dysuria. On this day the ligature separated, the noose thereof being perfect and firm, and the dressings having been applied to the wound daily. This has some exuberant granulations, not occupying more than half an inch, which have been touched with argentum nitratum. A feeble pulsation in the tumour has been constant since the last date, and we are of opinion that it has latterly been more vigorous; the tumour itself is very materially diminished, but not to the degree that, at this distance of time from the obliteration of the canal of the vessel, we should reasonably expect. The external jugular vein was observed to pulsate on the day succeeding to the operation, and this phenomenon has been repeatedly noticed since, the action of the vein being synchronous with that of the heart.

31st. Arterial pulsation has become

more distinct in the tumour, but is yet weak. It is supposed, from the situation of the latter (at the bifurcation of the common carotid), which is favourable to such, that a communication exists in that part between the the external and internal divisions. The wound is reduced to the size of a bean, is healthy, and the granulations protrude. The patient, being highly delighted at his recovery thus far, has been taking exercise in the ward of too violent a nature, such as dancing, &c. which has been only recently discovered, and the practice is of course forbidden, as the increased impetus of the circulation is owing to it.

June 14th. The aneurismal sac has grown larger within the last fortnight, and the pulsation remains equally, if not more powerful. Some pain has been lately felt at the incision, from the centre of which, a small and prominent collection of granulations emerges. It is dressed with dry lint and strapping, lunar caustic previously employed. The beating of the jugular vein has been often manifest.

24th. The uneasiness alluded to was merely temporary; the incision is now cicatrized. We are not able to detect any change in the condition of either carotid artery worthy of mention.

28th. Complains of cold and cough, which latter is dry and painful. Bowels open. Mr. G. ordered—

Pulv. ipec. gr. j. Extr. conii, gr. iv. M. ft. pil. ter die sumenda. Milk diet.

July 1st. Cough no better. To keep at the back of the mouth the extr. catechu, till dissolved.

5th. Has procured relief from the catechu.

18th. The cough has quite left him, and there exists only debility as its consequence. The pulsation, on the side operated on, has become more indistinct.

28th. Patient is suffering from suppuration of the right tonsil; a diffused swelling has taken place externally upon the neck, a little below the angle of the jaw. His countenance is very anxious and pallid. There is great impediment to swallowing. Poultices have been applied, and the tonsil opened

with a lancet. Bowels emptied by mist, sennae.

30th. Is much easier. A free exit of pus from the tonsil. Some dysphagia.

Sept. 20th. The above local symptoms subsided in due course, and the man has subsequently gained flesh. His spirits are good, and activity of body but little impaired. The swelling on the right side retains the same trifling pulsation, and the other on the left has not advanced, and is at present the cause of no inconvenience.

CASE 2.—Aneurism of the Popliteal Artery—Operation.

John Wood, æt. 58, admitted Feb. 21, 1831, under Mr. Tyrrell. He states that, about a year since, he experienced an attack of fever, during which inflammation, apparently involving the cellular tissue, and of the diffuse species, took place in the leg, occupying the foot and entire surface up to the knee. This attack left him deaf, and, upon application to an irregular practitioner, he was put under a course of mercury and salivated, to cure his deafness and the disease in the extremity. The leg got well after the mercury produced its usual effects upon the system, the inflammation having lasted four months. Six weeks ago only, he for the first time discovered any swelling in the ham, when he could assign no cause for its appearance; it has not enlarged during the last three weeks; but, in the commencement, its development was very rapid.

When examined upon his admission, this tumour was found to fill the entire popliteal space, and to be also distinct externally to the outer hamstring. A forcible pulsation was plainly felt in every part of it, synchronous with that of the radial artery, which beats about 60 in the minute. The superficial veins of the limb below were dilated and tortuous; there was a constant pain in the tumour itself, and numbness was often experienced in the leg and foot. Nothing indicated that the patient's health was impaired; his appetite was good, the bowels regular, and tongue clean. The functions of the heart and lungs were performed in a perfectly healthy

manner. By compressing the femoral artery just below Poupart's ligament, the pulsation of the swelling in the ham was arrested; and this instantly returned with the removal of the pressure from above.

Feb. 25th. Mr. Tyrrell to-day tied the femoral artery, at the upper part of the middle third of the thigh, with a single silk ligature; and, so soon as the latter was tightened, the pulsation in the ham ceased. One end of the silk was cut close to the vessel, and the edges of the external wound were then brought together with the red strapping used by Mr. Tyrrell.

Vespere, 9 o'Clock. The temperature of the limb has been maintained by flannels, but is at present rather below the natural standard. Some numbness has existed ever since the operation. He has not slept, but there is no pain, except some smarting in the wound, nor feverishness.

26th. Has been rather restless, and not slept much. Is free from pain and numbness. Pulse 70—bowels not open—limb of natural warmth, even to the toes.

27th. Is devoid of fever, though constantly moving about in his bed. Face rather red—no failure of temperature in the leg, nor return of pulsation in the tumour, which has manifestly decreased. A copious evacuation has been procured by an enema.

28th. No bad symptom has shewn itself. The strapping was to-day removed, and the union of the incision is very complete.

March 4th. Wound nearly healed, and tumour in ham has certainly diminished since last report.

8th. The incision has perfectly cicatrized, excepting at the point whence the ligature emerges. He has no febrile action about him, and the ham is the seat of no pain, nor of pulsation. Bowels are regulated by enemata and the house medicine.

22d. The ligature has not yet separated, although it is kept continually on the stretch by means of a piece of cord, attached to its extremity, and fixed amongst the dressings. In every respect he has been doing well.

31st. Patient is still confined to bed, in consequence of the ligature being retained.

April 25th. Ligature has remained in the thigh until to day, when it separated with the exertion of some little force after the protracted period of two months.

May 10th. Presented well.

**LARGE MALIGNANT FUNGOID TUMOUR
ON THE NECK. INCOMPLETE EXTRI-
PATION—DEATH.**

John Weir, not quite 23 years of age, first mate of a vessel trading to India, and a healthy-looking and vigorous young man, applied at St. Thomas's Hospital with a large tumour situated on the left side of the neck, June 21, 1831, and was admitted on the 23d, under Mr. Green's care. When he was visited by Mr. G. and Mr. Travers also on the 24th, we collected the following statement from the surgeon who had previously had the charge of him, from his father, and himself, who, being in a station of life superior to patients generally seen in a hospital, was able to give a clear account of the origin of his disease, and the symptoms arising from it.

Shortly before his last voyage to Bombay, and about twelve months from the present period, he caught cold from exposure to night easterly wind after violent exertion in dancing; an inflammatory swelling of one or more of the cervical glands near the angle of the jaw was the consequence, accompanied by a smart degree of febrile excitement; these were, however, so far reduced by the successive application of leeches, and by purgative and saline medicines, that in the space of a fortnight no enlargement was remaining, except the induration and thickening common to such cases. He now went to sea, and before many weeks had elapsed, a distinct and firm tumour, apparently to himself and the surgeon of the ship nothing more than chronically enlarged glandular substance, attracted his notice in the same situation as the former swelling. But few remedies were tried to discuss it, the surgeon waiting till

they should touch at the Mauritius, where he contemplated procuring iodine and ointment of hydriodate of potass. The latter were obtained here, and they having been used for the rest of the passage onwards some little diminution was effected, the part yet being larger than a hen's egg. Having landed at Bombay, he consulted a resident practitioner, who introduced a common lancet, but no other fluid escaped than blood, and this in small quantity. The surgeon was frightened as well as his patient, from the description of the latter; blood was afterwards abstracted locally by cupping, but nothing further to merit mention was done for him when in India. Nor during the voyage homeward were any means used to arrest the progressive increase of the enlargement which was taking place; for, owing to some internal disagreement between the surgeon of the ship and rest of the company, he declined his assistance. Upon his return to England, about the 7th of the present month, he again placed himself under his former medical attendant, residing near the Commercial Road in London, and the tumour is represented then to have been nearly equal to its present size. Great anxiety was now at length aroused within him, but notwithstanding the immense bulk no pain had been complained of, and his general health ailed not. Whilst outward bound, his mode of living was unrestrained, but coming home he abstained from wine and spirits. He is quite unconscious of having ever received a blow upon the neck, to which the commencement of morbid action might be attributed.

Being on this occasion examined by Mr. Travers and Mr. Green, the tumour seemed to the latter gentleman to have grown even within the last few days since he had seen the patient, and in this opinion he was supported by others who also inspected it at the first interview with himself. It is of irregular shape, but its dimensions may be judged of by its extending from a little anterior to the angle of the lower jaw to the median line of the back of the neck. In the centre it is conical, and at the

apex, which is somewhat less than the extremity of the index finger, a slightly reddened and thin state of the integuments exists, where ulceration may be soon anticipated ; at this point also the projection outwards from the plane of the neck measures between three and four inches. We trace the enlargement above to the lobules of the ear, which is thereby displaced from the skull, and below to within two inches of the upper margin of the clavicle ; in the former situation it is narrow, but broad in the latter and more defined. In front again it becomes narrow, and posteriorly very broad, with its edge gradually bevelled off as it approaches the ligamentum nuchæ. To the fingers of Mr. Travers, an uniform fluctuation, as if from contained fluid, was conveyed ; and the sensation was general in all parts handled. It appeared perfectly immovable ; of this particular we could not fully satisfy ourselves, as Mr. Green expressed a strong desire that the part should not be touched unnecessarily. Pain has recently been considerable ; within the few days last past, indeed, he has suffered severely ; it is of a lancinating character, recurring at frequent intervals, and more acute on some occasions than others. And the growth of the mass has been latterly rapid—in the course of three weeks its magnitude has been very greatly augmented. Numbness has been experienced on the side of the head, proceeding from the ear to the vertex. The surface is rather above the natural temperature, and often feels to the patient stinging and heated. No enlarged or varicose superficial veins are observable upon it, nor any discolouration, save at the spot above referred to. There is not the least aspect of malignant constitutional affection in the man's countenance, and he affirms that no internal ailment has within his memory assailed him. No traces of such meet the eye, but yet the system is not altogether free from sympathetic disturbance. His pulse is excited, and at 96 ; but this frequency may arise partly from mental influence, as he has been surrounded by a large concourse of pupils, and much interrogated. The

bowels are rather irregular, and the tongue white and indented at the sides ; it is tumid, though moist ; his appetite is excellent ; has no thirst. He is perfectly void of cough, dyspnoea, or any other disturbed function of chest, or abdomen. From the action of cathartics, taken since his coming on shore, a state approaching to syncope has been generally induced with each dose, a fact shewing the facility with which the balance of the circulation is disturbed. He has pursued a sea-faring life from boyhood, and exhibits all the fortitude and high spirits of the sailor. The father is a robust healthy man, and of the same avocation ; and the other members of his family are of sound constitution. His nightly rest has been broken, often entirely destroyed, wherefore opium in abundance has been taken, but not with its ordinary effect.

Mr. Travers appeared anxious to know more of the nature of the swelling by puncturing it, and such also was the wish of Mr. Green. Still they both agreed that if it were malignant, a chance of relief would be afforded by an operation, and as Mr. G. was averse to having the skin injured for any length of interval, during which a fungus might protrude from the wound, the puncture was postponed till immediately before the removal of the disease, should it turn out to be what they expected. This decision met with the entire concurrence of the patient, who has firmly made up his mind to undergo any operation that may offer a probable means of relief. An early day was therefore appointed for the purpose of setting the question at rest, viz: the 27th, and Mr. Tyrrell was requested to see the case in the mean time. Mr. Green directed 20 leeches to be applied to the part most painful—just below the central projection—and a cold spirit lotion constantly. The bowels to be opened by house medicine ; and liquor opii sedativ. M. viij. horâ somni.

June 25th. Relief for a few hours was procured by the leeches, which abstracted a plentiful quantity of blood, but towards the evening the pains recurred, and have precluded ease as well as sleep during the night. A dose of

mist, sennae comp. was administered yesterday, and followed by two copious stools in the evening, after the evacuation of which he almost fainted. He seems now inclined for rest, and has imprudently eaten two mutton-chops for his dinner, which he himself provided. Pulse and tongue as yesterday. The heat upon the surface of the tumour is diminished, and comfort results from the application of the evaporating lotion. The anodyne draught was not given last night, as he thought he could dispense with it and it was prescribed conditionally.

26th. Has been easier, and got four hours sleep last night. His countenance is lighter and more cheerful, it having been rather dull yesterday. Another supply of leeches has just been put on. Skin is quite cool—no change in tongue—pulse 100, softer, and less irritable. One stool has been passed to day, and he is about to repeat the dose of purgative medicine.

27th. He has not been uncomfortable but is a good deal excited at the prospect of the impending operation. Pulse is nearly at 120, and weaker. Bowels have been twice moved from the physic. No alteration is externally manifest in the tumour, which has been kept wet with lotion. There has been no difficulty of swallowing, nor symptom of irritation about the larynx.

The whisker and hair from the lower part of the temple being shaved off, Mr. Green at one o'clock to day commenced the operation, which we believe was the most formidable we have ever witnessed.

He first plunged a lancet into the most projecting portion to the depth of an inch, to ascertain the contents; from the puncture there issued florid blood in a free stream, which was not easily checked, and the patient became faint from the loss of the minute quantity of this fluid thus afforded. The flow was, however, arrested by plugging the aperture with lint, and applying pressure continually during the different steps of the performance. It being thus decided that pus was not a component part of the tumour, Mr. G. forthwith proceeded to extirpate the disease; be-

ginning by making an incision from the front of the tumour to its most posterior extent, slightly curved towards its anterior extremity (with the concaving looking upwards) in order to inclose the apex, below which it passed. The whole length of the incision was somewhat elliptical, and did not penetrate beyond the integuments. A smaller one, and correspondent in shape, was then carried above the conical portion, meeting the former at some little distance from either end. Within the ellipsis of these two a considerable proportion of sound skin was comprised, together with the summit of the mass. When the superficial fascia of the neck, posteriorly, was touched with the knife where it becomes thin, it was readily divided, and in one or two parts the capsule of the tumour, which proved to be very delicate, was cut into, and from them a fluid freely flowed, of a dark green colour, mixed with blood, and of a peculiar and disagreeable odour. This was prevented from further escaping by pressure on the openings with the fingers of an assistant. The more anterior fascial covering was now detached with the knife supported on the finger of the operator, which was placed between it and the capsule; and this latter was now fully exposed in its centre. At the present stage of the operation some idea was formed of the deep attachments of the diseased parts, the difficulty of separating which was just beginning. The sac was very firmly connected above and behind, close to the occiput, and in the division of its connexions in this situation two large superficial arteries were cut through, and in consequence of their bleeding profusely tied with ligatures. Below, and on the posterior direction, it was less strongly adherent, but excessive pain was produced by the manipulation necessary to disengage it with the knife and fingers. This point was the lowest of any we have mentioned in our account of the external appearances, and beyond it the enlargement did not descend on the posterior aspect. But in front, a portion passed behind the clavicular portion of the sterno-cleido mastoideus muscle, which could not from

this cause be traced downwards to its ultimate boundaries without a great deal of careful and protracted dissection, and probably it would have been requisite to divide the muscular substance. The poor fellow, too, had become exhausted to an alarming extent from copious loss of blood and pain, he having been under the knife upwards of half an hour, and it was thought by Mr. Green, Mr. Travers, Mr. Tyrrell, and Mr. Key, who was also present, perilous to proceed with the removal of this part in the patient's very depressed state. He had vomited on the table, and by this effort the heart's action was in a trifling degree restored ; but a death-like pallor was spread over his whole face, and he was for five or six minutes bordering on syncope. On this account the operation was necessarily delayed for awhile, and after it was resumed he moaned much and loudly, his pulse continuing excessively low and irregular. Brandy, pure and diluted, was given, but it did not speedily revive him. We should have stated, however, that previously to the vomiting and exhaustion supervening the sac was emptied of its contents, and cautiously dissected away superiorly. By the evacuation its bulk was diminished, its different processes rendered more distinct, and consequently its separation facilitated. The loose portions of the cyst were at last quickly removed, and with the exception of the prolongation concealed by the sterno-mastoid muscle, the entire mass also. Before the patient was conveyed from the operating theatre, several pieces of German tinder were gently inserted to the bottom of the wound, from which there was still an abundant general haemorrhage, and there compressed. By this application, and a dossil of lint, confined by a single strip of plaster, the bleeding was restrained, and the man brought into his ward lying on the same table, and unfortunately in a very low condition. He reclined in bed, chilly, and extremely pale ; seemed drowsy, and spoke not, but for water to allay his thirst. The pulse was feeble to the lowest degree, irregular, and the artery felt empty ; in fine, he was barely alive, his cheeks

displayed a cadaverous hue, and immediate death was looked for.

It ought not to be omitted, that from the portion left behind, covered by the mastoid muscle, Mr. Green squeezed out the soft matter filling the sac, previously to any dressing being used.

Structure of the Tumour. The contents of the sac exhibited an undoubted specimen of the malignant fungoid disease, in the stage of encephaloïd tumour. The substance of this last was soft and readily broken down, of a dull white colour, pulpy consistence, and presenting a convoluted aspect, very similar to brain externally. In addition to this structure, there are to be mentioned the fluids which came away during the operation, very characteristic. The cyst itself was denser in some parts than in others, shining on its superficial surface, and seemingly aponeurotic in texture.

No kind of re-action having taken place, in the space of a few minutes half an ounce of brandy, with fifteen minims of tincture opii, was given to him in camphor mixture. From this a state of tranquillity was derived ; but no restoration of temperature was observed by 5 o'clock, p. m., when, accordingly, the draught was repeated, though not exactly with the same quantity of laudanum.

At nine o'clock in the evening we found he had rallied very inconsiderably, his pulse being nearly as low as ever, and the feet still cold. He had complained of thirst, and some pain in the neck ; had slept for a little while, and been during the whole time almost motionless. Was now only just able to speak in a whispering tone. No bleeding had occurred, nor oozing from the dressings. Hot bricks had been constantly applied to the feet, and flannels to the whole surface of the body.

June 28th. About 2 o'clock, a. m., the above tranquil state, during which the poor fellow might well nigh be regarded as lifeless, and which was probably the effect of opium in some measure, went off, and he was becoming restless. A small dose of laudanum was therefore administered, and as his

system was not roused by the cordials he had taken, some brandy was unit'd with it. Of the latter he had partaken at intervals, in sago and gruel. Shortly after four o'clock vomiting came on, preceded by pain of epigastrium, retching, and nausea. The former continued unabated up to eight this morning, the arrow-root, sago, &c. being rejected as soon as swallowed; when Mr. Whitfield prescribed a draught composed of tinct. opii, M. v., tinct. cinam. 3ss. aq. cassiae, 3j. Since taking this, he has thrown up nothing; the retching and nausea have returned, but a little tea beat up with egg has staid on the stomach. Hiccough has lately appeared, but is neither violent nor frequent. His pulse is excessively feeble, tremulous, and imparts the sensation of the vessel being evacuated. The surface is tolerably warm, and moist, but he still feels a coldness of the lower extremities. Does not acknowledge pain of head, except from the straining exertions. Countenance is less pallid, and there is a more animated expression in the eyes. His urine has been voided voluntarily, with facility, and in proper quantity; has had no motion from the bowels. About three hours have been spent in sleep since nine o'clock last evening. The wound has been easy, but not interfered with.

Mr. Green ordered at his visit, at two o'clock, one grain of opium immediately. Brandy to be continued in cold arrow-root; a plaster of mustard to the scrobiculus cordis; and the bricks, &c. externally.

29th. No sleep has been enjoyed, but he has not been suffering pain. He is nearly as low as yesterday, though having more power to speak. His pulse is up to 140, and of the same weak character—whole surface of the trunk and extremities naturally warm, and the countenance betrays less of the deathly pallor. Hiccough has been present throughout the night, and has not yet ceased, but there has been no recurrence of vomiting; the former comes on about every half hour, and lasts for the same period before it goes off again; it is feeble, short, and not loud. He

makes water easily; bowels not moved. Some swelling is observable around the incision, but no discolouration. About a pint of brandy has been consumed since the operation, and six ounces since yesterday. He has also taken jelly, blanc-mange, and arrow-root, in good quantity. At five, p. m.; Mr. Green saw him, when the hiccough was unrestrained by opium, capsicum, and effervescent mixture, which had been severally tried by the dresser during the day; and no evacuation was procured from the bowels. An injection of gruel and common salt was directed to be thrown up directly for the latter purpose.

30th, p. m. The hiccough has alternately ceased and returned for half an hour; and it is now very feeble and short, but most distressing to the patient, who is labouring principally under this symptom, and moans in a most pitiable manner after each spasmodyc action of the diaphragm. An enema containing 3ij. of laudanum and two ounces of starch has been injected, and the hiccough was checked for a short time by it, as it was previously by the cayenne also. The pulse is 140, very weak. It, as well as the system generally, is quite under the influence of opium, which has been liberally supplied through the day.

30th. He has been comfortable, with the exception of the occurrence of hiccough, which has however been less frequent, and indeed absent for an hour together. At six this morning he took opii, gr. ij. and the pulse is now equally accelerated as yesterday, and the skin hot, and rather dry. There is a marked improvement in the countenance. Several purgative glysters have been employed without any effect; consequently, no stool has passed since the day of operation. A second opiate injection was likewise exhibited last night, to allay the hiccough, and with some temporary advantage. Says he has appetite for chicken, and some is in preparation for his dinner; has taken a fair proportion of nutriment in the form before mentioned, together with brandy and effervescent lemonade. A bread

poultice is laid over the dressings on the neck, in consequence of uneasiness in the wound.

9, p.m. One scanty stool was discharged an hour ago, without glyster, or voluntary exertion. No opium has been had recourse to during the day. His pulse has varied from time to time, both in fulness and frequency—it is now very rapid and soft; skin temperate and moist; breathing free; hiccough recurs less often; neck is still uneasy. Ate two or three slices of chicken at two o'clock.

July 1st. Severe pain has been experienced in the neck the greater part of the night, and an offensive smell, as from sloughing, arises from the wound and dressings, along with some purulent matter. There is rather more surrounding swelling, but no redness. His night has been sleepless on account of the pain, and the hiccough has been unimportant, and appears gradually going off. Three stools have been passed, not copious. Pulse is 130, feeble but fuller, and has been less changeable—skin warm, and has some moisture—tongue furred, white, and marked by pressure against the teeth—thirst diminished. The whole of the German tinder and lint were removed from the wound, which, owing to the complete separation of its edges, was of course very extensive, and its surface was sloughy. There were, apparently, deeper sloughs towards the anterior part. Some pus escaped, the foetor of which and the entire part was most intense. At the circumference, posteriorly, two granulating spots are visible, pale and smooth, and, to our eyes, disposed to assume the fungoid character. Lint, steeped in solution of chloride of lime, was placed upon the foul parts, one or two adhesive strips to support the sides of the wound, and a bread poultice afterwards. Mr. G. did not think a continuance of brandy (whereof ʒjss. has been consumed during the last twenty-four hours) necessary, but ordered him to drink port wine and water, in such quantity as circumstances might demand; the jellies, arrow-root, &c. as before, with whatever meat he might

fancy for his dinner; and the following draught every six hours—

R. Mist. camphoræ, ʒjss. Ammon. subcarb. gr. v. Liq. opii sedativ. ℥vij. M.

9, p.m. The neck has been easier, but a slight erysipelatous redness is now developed on the cheeks. Some chilliness, bordering on rigor, has been observed by the sister, but the patient denies having had the sensation. Pulse the same. Has taken the wine and water and a custard pudding; could not take so much meat as yesterday. Slept a good deal in the day.

July 2d. There is increase of erysipelas upon the face, but not important. During the night, the redness was very bright at one period, but it is at present of a light hue, and not accompanied with much effusion or tension. The disease has not made much progress below the wound or behind it, being here limited to a very few inches. Pulse very rapid and feeble, at 134—skin hot—great thirst—tongue white, more furred and loaded. A colocynth enema was injected last night, and, although some time retained, no alvine matters were solicited, and this morning no motion has come away.

Mr. Green was present about 3, p.m. and ordered—

Hyd. submur. gr. v. Ammon. subcarb. gr. x. M: statim sumend.

The former draughts, wine, jellies, &c. to be continued without any alteration.

9, p.m. Erysipelas has spread in every direction, but the inflammation is not of an active description, the redness being not at all vivid, and there is no confusion of ideas nor headache—the swelling is greater—has dozed much—the bowels have been once sparingly moved.

3d. The erysipelatous inflammation has extended in each direction, more particularly downwards toward the chest. Still he has not complained more, and the pulse retains the same characters, being 130 in the minute—tongue not changed—has had some sleep—bowels once open. Wound does not shew larger sloughs, but the discharge is very offensive, and the granulations appear

as though inclined to fungate. Mr. Green did not see any indication for change in the treatment, and ordered brandy to be resumed if the strength should fail.

4th. Further diffusion of erysipelas is now noticeable, with increased tumefaction of the face. His pulse is at 125, but more feeble, and the countenance is, moreover, more fallen—the tongue, however, is cleaner and moist—skin temperate—bowels free.

Remedies as before. Cold saturnine lotion to the inflamed parts.

5th. The inflammation occupies a considerable portion of the opposite side of the face, and the swelling has augmented. There is also more of the redness upon the trunk. Pulse was on last evening irregular, extremely depressed, and of the previous frequency. Skin is temperate—two motions from the bowels—wound much in the same state, but yields less discharge. Wine, &c. taken in good abundance; and he does not suffer much pain, either locally from the wound and erysipelas, or in his head from the latter cause.

6th. Was delirious during the night, and talking incoherently for some hours. The erysipelatous redness has in some degree declined, and the swelling also, and none of the face is further involved. More of the trunk is, nevertheless, implicated anteriorly. He is exceedingly low, but does not refuse nourishment. Pulse 130, regular, feeble—tongue cleaning—bowels acted once in the night—discharge from wound still scanty. Ten ounces of port wine have been given to him in water during the last 24 hours, with the other means; and Mr. Green now prescribed—

Quinæ sulph. gr. ij. Pulv. capsivi, gr. iij. M.
to be taken either in combination with the former draught, or in any other fluid menstruum the patient might prefer. To encourage suppuration from the neck—

Catapl. Cerevisiae to the wound three or four times daily.

7th. We were unable to visit him in the morning, but his condition was not, to appearance, then altered. Delirium had been pretty constant throughout

the night; and he had been in much agony, principally from the neck, though quiet. At 7, p.m. his breathing was laborious and sonorous; the left eye had become dim, and was copiously smeared with a thick and adhesive mucus; the right was closed from erysipelatous swelling of the lids. These latter were no longer red, and the whole countenance had a dingy and death-like cast. The respiration had been thus affected about an hour; five or six gripping and liquid motions had involuntarily passed from the bowels, and severe tormina were continuing every now and then; the contents of the bladder likewise escaped unconsciously. There was coldness of the extremities—in fact, he appeared to be sinking, and not slowly. Yet the pulse was not more depressed, nor irregular, nor numerically increased. He had not rejected any food, but eaten some meat about the middle of the day, and the medicines, wine, jelly, &c. were taken as before. Some brandy was now brought to him, diluted in warm water, and an enema of starch and laudanum thrown up the bowels. The wound is discharging freely of pus, and sloughs are detached with each poultice.

8th. After a repetition of three clysters, the two first being followed by loose and painful stools, the diarrhoea was checked and the abdominal pain subsided. He shortly became tranquil and slept, awaking at intervals, during which his wandering state was very manifest. His respiration is to-day nearly natural, greatly easier, and he has rallied in a manner quite astonishing. He is not in pain, but his sensations are so very depressed, that he cannot at all adequately explain them. Has occasional tormina, but there is no tenderness of belly. The erysipelas upon the abdomen seems to be of the erratic species; the redness is here very faint, and the affection, to the eye, involves nothing more than the epidermis. Pulse has been variable; it is now ample, at 130, and readily compressed. Skin of every part warm—tongue is tolerably clean, and whitish. Wound of the same appearance, and the beer-grounds poultice is continued to it.

Medicines, &c. with brandy, have been supplied as ordered. To repeat the starch injections, with xxx. drops of laudanum in each, if diarrhoea should persist.

9th. Two enemata have been given, on account of the diarrhoea, and each time relief was obtained. The patient is in just the same low state as yesterday, not having power to retain his urine, but has been rather easier. His mind has been often wandering, in the midst of a dozing and heavy condition. Respiration is becoming embarrassed—pulse full and regular, not at all stronger—deglutition quite perfect—Erysipelas is much diminished upon the trunk, and is scarcely worthy of the title.

10th. He continued no worse throughout yesterday, but, at two o'clock this morning, breathing grew more difficult, and his powers lower than ever. Increased purging also supervened, which was, for a time, alleviated by the starch and opium administered by the rectum. Up to the hour of his death (12 o'clock, noon), he was sensible, though occasional incoherency had existed in the night, as previously, and did not lose the ability of swallowing the stimuli which were constantly poured in. The erysipelas had disappeared from the body, and scarcely a vestige of it could be found about the head; but his sufferings were great, from pain in the wound.

Dissection, 26 Hours after Death. Superficially, the wound was sloughy, but the extent of it, compared with the space occupied by the tumour during life, was very much contracted. In the centre of the foul mass, there were three or four small fungoid growths, which, when cut into, displayed an internal spongy structure, of a dark purple colour, and from which blood of the same hue was even now expressible. We might say that the disease was included in the superior and posterior anatomical triangular division of the neck. At its lower part, it did not quite reach the upper border of the omohyoideus muscle; it also became more superficial inferiorly, nothing save the thin cyst here existing, upon which

some of the external and descending branches of the cervical plexus were spread. Here, too, were found two bodies, presenting the appearance of common enlarged glands, though having a white investment, little larger than almonds, in which condition we are led to infer the malignant tumour originated. By detaching both the origins of the sterno-mastoid muscle, and turning it upwards, the limits of the diseased structure anteriorly were seen. It passed behind this muscle, opposite to the corner of the os hyoïdes, so far forwards as its anterior edge, and it was in this situation separated from the common carotid artery, where it bifurcates, merely by its condensed sheath. Its margin was tolerably defined, and the portion was easily disengaged from its cellular connexions. Behind, the morbid structure did not proceed beyond the anterior border of the trapezius. Great difficulty arose in making out the parts superiorly, from the loss of substance consequent upon the sloughing. Portions of dead cyst were discovered above and behind the angle of the jaw, quite contiguous to the parotid gland, which must have been thus forcibly pressed down, if not implicated with the sac itself. The posterior part of the mastoid process, and the occipital ridge beyond that projection, were for some distance exposed, so that the fingers could be placed directly in contact with their denuded surfaces for more than one inch, amidst the disorganized textures. The deeper muscles of the neck were slightly involved, more particularly the complexus and splenius capitis; the transverse process of the atlas was deprived partially of its coverings, and the recti postici and obliqui capitis were to be beheld on clearing away those parts deprived of vitality; but, with this exception, the disease had not penetrated deeper than the plane formed by the internal surface of the trapezius and mastoid muscle. It was covered by the latter in front, as we have before noticed, but, posteriorly, the trapezius did not overlap it. The omo-hyoideus was not in the least displaced; but, from the pressure exerted by the process in front, the

internal jugular vein, carotid artery, and par vagum, had become matted together by adhesive depositions within their sheath. Beneath the cellular tissue of the neck, on the right side of the wound there was a plentiful infiltration of pus, the effect of the erysipelatous inflammation. Pus was likewise met with in the cellular texture between the pharynx and spine. Both lobes of the thyroid gland were enlarged and indurated, and no longer possessed of their flattened shape. When incised, the surfaces appeared semi-transparent and resinous. A remaining portion of the thymus gland, about the size of a horsebean, was discovered in the anterior mediastinum, also endowed with morbid qualities, in appearance the same as those which constituted the disease in the neck. Upon section of this body, a grumous substance was presented externally, whilst the interior was whitish and pulpy. In the central lobe of the right lung, extensive disorganization had taken place, in the form of white and medullary deposits, of the consistence of soft cheese, and about equal to walnuts. An unusual collection of adipose matter was visible on the external surface of the pericardium. Within the larynx, there was a reddened state of the epiglottis, and of the lining membrane of the arytenoid cartilages.

The stomach and large intestines were greatly distended with flatus, but healthy in texture. The liver was externally of a peculiarly dark livid tint, except at its anterior thin edge, which was natural. It was partially emphysematous underneath its peritoneal coat, produced by rapid decomposition; in the middle it was very soft, and of a dirty opaque cast, the natural granular structure being lost. The cortical substance of the right kidney was softened, and, within it, the same medullary growths had sprung up as in the lung. Some old adhesions were detected between different parts of the intestines and the peritoneum. Prostate gland somewhat enlarged. Pancreas, spleen, and mesentery were healthy.

Owing to the intense heat of the weather, putrefaction had been rapidly ad-

vancing, especially in the neck and face. The odour exhaled from the body was extremely offensive, and this was augmented tenfold by the sloughy condition of the wound.

BETA.

V.

Dr. OGDEN (OF SUNDERLAND) ON CHOLERA.

THE following highly valuable letter from Dr. Ogden, of Sunderland, to the editor of the Medical Gazette, we here republish, as it cannot fail to check a little the ultra-contagion mania which has too long prevailed, to the ruin of thousands and the loss of many lives.

"The first cases which were publicly made known as epidemic cholera were those of the Sproats, three in number, one of which proved fatal on the 26th, another on the 31st of October. But several sporadic cases, exactly similar, had occurred from the commencement of August.

1. The first case that I am aware of was that of a middle-aged man, a potter, living near the river on the north side, about three miles from the harbour mouth, and two from the town of Sunderland. The case fell under the care of Mr. Dixon, who, at the time, considered that it differed in nothing from the disease described by the Indian writers, and who has not since seen reason to alter his opinion. The man recovered slowly.

2. The second was that of — Arnott, a middle-aged labourer, living at Pallion, on the south bank of the river, about a quarter of a mile higher up than the first case. His residence was 50 or 60 feet above the level of the river, and about the distance of a stone's throw from it. He became ill on the 8th of August, and died in twelve hours. He also was under the charge of Mr. Dixon, with whom and Dr. Brown I had an opportunity of seeing the body the next day. I certainly have not since seen one in which the external appearances after death were more characteristic of malignant cholera. The collapsed face,

sunk eyes, surrounded by a dark circle, blue hands and nails, contracted and shrivelled fingers, and great rigidity of the muscles, were most strongly exhibited. No examination was allowed.

3. The case of Robert Henry, æt. 43, a pilot, occurred next, and terminated fatally on the 14th of August. He lived in a row of cottages near the mouth of the harbour, at the east end of Sunderland, and in an airy situation.

4. — Pearson, a shipwright, middle-aged, living at the western extremity of Bishopwearmouth, was the next. He became ill on the 27th, and died on the 28th of August. He was a patient of the Dispensary, under the care of Dr. Haslewood, who assures me that every symptom of Indian cholera was present.

No connexion between any of the above cases could be traced, nor had they (with the exception of course of the pilot) any connexion with the shipping. They were regarded as cases of aggravated English cholera by the majority of the medical men, though it was strongly suspected by some that they were the forerunners of the epidemic.

Cholera continued very prevalent and severe during September, but I know of no deaths from it in that month. I have been informed by very good authority that a fatal case occurred in a middle-aged man, about the 12th of October; he had not been seen by a medical man, but he had spasms, and the characteristic vomiting and purging and died rapidly.

Mr. Holmes has obligingly furnished me with the following information concerning the Sproats, who were originally under his care :—

1. — Sproat, æt. 60, labourer, Long Bank, Sunderland ; died 26th October.

2. — Sproat, æt. 10, his granddaughter, became ill half an hour after his death.

3. — Sproat, æt. 32, son of No. 1. father of No. 2, became ill on the 27th, Nos. 2 and 3 were removed to the Infirmary; No. 2 recovered; No. 3 died on the 31st. On the same day died,

4. — Wilson, a keelman, High-street Sunderland, and,

5. — Rodenby, a shoemaker, Monk-

wearmouth Shore ; and, on the 1st of November died,

6. Elizabeth Turnbull, nurse at the Infirmary, who assisted in laying out the body of No. 3.

Between Nos. 1, 2, 3, and 6, there was an evident chain of connexion; 4 and 5 were distinct, and isolated from all known sources of contagion.

No deaths occurred between the 1st and the 6th of November; on the latter day there were several, on the 7th more, and on the 8th the cases were numerous, and the existence of the epidemic amongst us could no longer be doubted.

As to the origin of the disease, a subject involved in the utmost mystery, I am inclined to believe it to be as indigenous here as it was in JESSORE in 1817. In hazarding this opinion, I am aware that I am in opposition to a mass of very powerful evidence, collected by the advocates of the doctrine of contagion; but whilst I firmly believe the disease to be contagious, I think also that too much has been ascribed to this principle. Contagion once granted, its supporters have attributed to it every case of cholera that occurs. Now if the disease arose spontaneously in one individual, it might in a hundred, or a million.

There has been great intercourse between this port and Riga, Petersburgh, and Archangel, during the existence of cholera at those places; and it was the mortality among the British sailors, of whom several were our townsmen, that occasioned the institution here, of, I believe, the first Board of Health in the kingdom. It has been supposed that the sailors, on their return from those ports, brought the disease with them; the quarantine which is a human institution, and incapable of subverting the laws of nature, being too short to extinguish the ‘germs,’ or the ‘seeds,’ figurative terms by which diseases are said to be propagated. But if the sailors brought it with them, it was much more likely that it should make its first appearance in some other port than this; for although many Sunderland vessels go every year to Petersburgh, &c. the intercourse is indirect, and an

exceedingly small proportion return direct to this port. They return with cargoes to almost every port in the kingdom, from Aberdeen round by the south and west to Glasgow. Independent of the vessels which trade directly between this country from London, Liverpool, Bristol, Hull, and other places, there have been more Sunderland ships from Russia delivered at any one of the ports just named than at Sunderland.

It is to be recollectcd, however, that when the foreign voyages were over, and the ships returned to the coasting trade, there was a concentration, a *reunion*, in Sunderland, of a great number of persons who had been, at some period of the Summer, in the unhealthy towns. Every sailor too has a chest in which he keeps his clothes, and whose entire contents he would bring to his family in the town, for purification. Moreover, some of the chests which came home had belonged to persons who had died abroad, and had probably never been opened since the clothes of the deceased were put into them. The combination of these circumstances may perhaps be thought sufficient to account for the introduction of any contagious disease. But they do not explain the unusual prevalence of cholera during the Summer, nor the fatal cases of August; nor has it been observed that the families of sailors have been more visited by cholera than others. Sailors themselves have been wonderfully exempt during its prevalence here. Besides, the sailors of London and other places died abroad, and their clothes would doubtless be sent home in like manner; yet they have not brought cholera.

Whatever, therefore, were the facilities for the importation of cholera here, they were much greater in other places. So far from following the 'great routes of human intercourse,' it has chosen one of the least frequented paths.

Here I beg leave to correct an error which appears at page 238 of this volume, where it is stated that a vessel from Hamburg performed quarantine in the Wear. No ship has entered the harbour from Hamburg without a clean bill of health, which expresses

not only that the crew, specifying their number, are in 'perfect health,' but that, up to 'that period, perfect health prevailed in the town and port of Hamburg, and the country adjacent, which continued free from cholera morbus, or other contagious or infectious disease.' This bill of health is granted by the British Consul at the place. In addition to this, every vessel from Hamburg, since June, has been examined by a medical man before being liberated. What have been styled suspected vessels, were ships from Holland detained under observance or precautions; and it is to be recollectcd that, up to this day, there is no suspicion of cholera in Holland.

That the spreading of the disease is the effect of some unknown power, very different from contagion, is, I think, evident from the phenomena which it has presented in this country. Newcastle, a large and populous town, within twelve miles of Sunderland, and holding daily intercourse with it, escaped the disease a whole month. Gateshead, another populous town, on the *hither* side of the former, and holding similar intercourse with both it and Sunderland, escaped for another month. London, holding constant intercourse with all these places by land and by sea (by sea it is said to travel most rapidly) yet remains free, nearly three months after the appearance of the epidemic on our shores. The contagionist says this only proves the inhabitants of these places not to be predisposed to the disease at the time the first emanations of contagion reached them. The reasoning is very convenient; it assumes that contagion is constantly travelling, and arriving at these places, but that it is not until the constitution is undermined by predisposition that the population falls a prey to the venom of contagion. A corollary of the same proposition is, that *predisposition travels*; for contagion is assumed to be constantly travelling, but it is only when accompanied by predisposition that it is rendered obvious, by its effects, to the senses. Another contagionist reverses the order of the causes, and alleges that contagion constantly spreading, predisposes all the

districts surrounding an infected place ; the disease then lies dormant, or latent, in the constitution, and all that is required to develop it is certain atmospheric vicissitudes, or debilitating causes, the peculiar nature of which it is not easy to comprehend, or is, perhaps, beyond our comprehension. But the former mode of reasoning is the most usual, namely, that contagion travels, and predisposition renders liable. If a populous town on one side of a river suffers from cholera, and another on the opposite side is free from it, it is because the people on the one side are predisposed, whilst those on the other are not. If the disease arises in Sunderland, and is presently found in various districts to a hundred miles north, and not to the distance of ten miles south, it is because the inhabitants to the north are more predisposed than those to the south. In short, it is a postulate with the contagionist, that, for the disease to prevail, the people must be predisposed ; but what this predisposition consists in we are never told. We have certain general ideas about the predisposing effects of intemperance, exhaustion, privation, and the like ; but these are not sufficient, for we find the people of one place just the same in these respects as those of another, but we never discover which of them were predisposed until the disease has attacked them. Hence, to say that people *must have been* predisposed, because we see that they have been attacked, conveys no information whatever. The term predisposition, in this loose acceptation, appears to me inadmissible in scientific language ; it merely expresses an unknown antecedent state.

Even in a narrower circle, the effects of contagion are apt to be overrated. Nothing is more common than to find, where a death has occurred, that the rest of the family are affected with diarrhoea, which, if neglected, runs into fatal cholera in some of them. Hence a succession of deaths, giving the appearance of one person having taken the disease from another, whereas they were all affected with the precursory diarrhoea at the same time. In a family too there is generally a similarity of

constitution, habits, clothing, diet, residence, and other circumstances ; and it is peculiarly likely that the cause, whatever that may be, which produces cholera in one member, shall have the same effect on the others. Indeed, it is remarkable that it has so frequently attacked one member of a family, and spared the rest, who might be supposed more than ever liable to its visitations, from the fatigues of night watching, and the depressing effects of grief ; and what was unfortunately too frequently the case, the sudden deprivation of the earnings of the deceased, who had been their main support.

Throughout the whole epidemic, cases were constantly occurring wherein no connexion with any source of contagion could be traced. This was most striking in the commencement, about the 6th, 7th, and 8th, of Nov., when the disease suddenly manifested itself in many separate points totally unconnected. I can hardly conceive it possible to account for this by contagion, unless we conceive the whole atmosphere filled with it. After so many foci of contagion had been established, it was not so easy to gainsay the possibility of a person's having been exposed to it ; but the number of persons obviously exposed to it with perfect impunity, was very great. Medical men have been obliged to perform the duties of nurses, to assist in the application of warmth and friction, restore the patient to a proper position when he would not remain a moment at rest ; to bleed, lift to the bath, raise the head, and administer medicine. After death, they have inspected the bodies, lifted them out of bed and replaced them, and imbued their hands in the animal fluids ; yet no death, and perhaps scarcely a case of serious illness, has occurred among them. And I may here state that I have not heard of any medical man conveying the contagion of cholera to his other patients.

Having said that in many families cholera has attacked one person alone, I ought also to state that in others it has committed the most dreadful ravages, three, four, or more individuals being destroyed. In some cases there

is much probability of their having taken it one from another by contagion; in others there is not this probability. Thus,

1. Robert Henry, pilot, died 14th August.

2. Margaret Henry (unmarried), cousin to No. 1, became ill Dec. 11th; died Dec. 15th or 16th.

3. John Parkin, æt. 4, nephew of No. 2, became ill Dec. 12th.—Recovered.

4. Margaret Henry, æt. 13, daughter of No. 2, became ill Dec. 13th; died same day.

5. Mrs. Parkin sister of No. 2, mother of No. 3, became ill Dec. 16th; died Dec. 18th.

6. William Henry, alias Thompson, son of No. 2, became ill Dec. 17th.—Recovered.

No. 5 was in frequent attendance on No. 2 until No. 3 required her attention. Both 3 and 5 may have got it from 2.

Nos. 4 and 6 lived in the same house as 2, and may have had it from the same common cause.

Again,—

1. James Ellemore, æt. 60, died Nov. 6th.

2. Elizabeth Hopper, an elder sister, died Nov. 17th.

3. Jane Johnson, another sister, died Nov. 28th.

4. Thomas Ellemore, æt. 67, a brother, died Dec. 25th.

5. Ann, wife of No. 4, died Dec. 27th.

The first four persons lived in separate houses, from a hundred yards to half a mile distant from each other, and were ill at very different times. What the intercourse might be, I do not know.

On the important subject of cure, I fear there is little satisfactory to be said. The number of recoveries from *cold blue* cholera has borne a very small proportion to the deaths. Of the 330 recoveries reported, a great majority were not attended with the coldness and lividity of the extremities, great collapse, and loss of pulse, so characteristic of the dangerous cases.

The Indian rule of bleeding has been

freely tried with various success; sometimes blood could be obtained, at others it could not; in the latter case, no harm was done by the attempt. When blood was obtained in the commencement, it was often productive of benefit, the circulation becoming equalized, the patient expressing great relief, the pulse improving and continuing perceptible to the termination, whether in death or recovery. Sometimes, again, it appeared to diminish the powers of life. On the whole, it is a doubtful remedy; a criterion is wanting to guide us in the employment of it. Dry external heat is of great importance; hot air baths have been tried, but the deadly coldness of the extremities is totally unaffected by them; the contact of hot solids, as bricks, bottles, bags of sand, is much better. Friction of the extremities with hot flannel should be next to incessant: it is one of the few means we possess of restoring the circulation; indeed there have been recoveries principally due to the assiduity with which it was employed. Brandy is always used, often rejected a few minutes after it is swallowed. Opium sometimes relieves the sickness, sometimes it does not. Calomel, in the majority of cases, appears to possess little or no efficacy. Viewing the mucous membrane and the skin as one continuous surface, and considering the suspension of their powers of absorption, we are led to the employment of such remedies externally and internally as act as mere stimulating applications. Sinapisms are to be applied to the epigastrium, to allay the vomiting, and to the calves and thighs, to cure the spasm. A mustard emetic has often succeeded in restoring the pulse. Oil of turpentine by mouth in $\frac{3}{4}$ ss. doses, and by injection, is a powerful stimulant. Camphor and the essential oils of mint and cajeput are inferior to oil of turpentine in stimulating power. I have not seen any trials of the fixed alkalies, but have heard of their failing like every thing else.

The consecutive febrile state is to be treated like fever under any other circumstances. There is usually very great cerebral oppression, indicating

blisters to the nucha and shaving of the head. Small doses of calomel are also beneficial. The greatest care is required in avoiding errors in diet during convalescence.

Dissection has hitherto revealed nothing which accounts for the formidable train of symptoms whose cause is sought. There is an accumulation of blood in all parts of the venous system, with the curious exception of the vena portæ and its branches. The engorged state of the lungs, and the oppressed respiration during life, point to the respiratory system as principally suffering, either idiopathically, or symptomatically of some altered condition of the nervous system.

Prophylaxis.—The attack is generally preceded by diarrhoea, varying in duration from six hours to three days: this is the critical time for successful treatment. I have found pills prepared according to the following formula very successful in arresting the diarrhoea:—

B. Opii, gr. xv.

Hydrarg. Submur. 3j.

Pulv. Bacc. Capsici, 3iss. vel 3ij.

Confec. Rosæ, q. s. ut fiant pil. lx.

As they are in constant request when visiting the abodes of cholera patients, it is convenient to carry a box in the pocket. One or two may be given every three hours until relief is obtained. They produce a state of constipation, which continues two or three days, and which it is quite unnecessary to remedy by laxatives, as the bowels soon resume their natural functions. When there is much pain of abdomen or griping attending the diarrhoea, it is alleviated by hot fomentations or a senna-pism.

During the prevalence of cholera, there are observed among persons otherwise healthy, various anomalous affections of the nervous system, as spasms and cold sensations of the hands, feet, and legs, peculiar thrilling sensations of the extremities of the fingers and toes, and a feeling of great anxiety in the praecordial region.

I am, Sir,

Your obedient servant,

HENRY OGDEN, M.D.

Sunderland, Jan. 14, 1832."

VI.

ABSTRACT OF CASES OF INSANITY BY DR. MACROBIN, WITH POST-MORTEM APPEARANCES.

[Aberdeen Lunatic Asylum.]

Case 1. Andrew Braid, ætat. 56, admitted 1816, with monomania elata, and partial dementia, and died October, 1830, with symptoms of pneumonia—having exhibited no marked physical symptoms during his confinement, excepting having had a very irregular and intermitting pulse, and some symptoms referrible to the cardiac region.

Autopsy. Head.—No increased vascularity of the membranes; substance of the brain remarkably firm; bloody points numerous and large; an ounce and a half or two ounces of serum in the ventricles.

Chest.—Recent lymph on left pleura; great engorgement of both lungs, especially the left, which was friable, granular, and infiltrated with sero-purulent fluid. Left ventricle of heart hypertrophied and dilated. Abdominal viscera healthy.

2. John Mason, ætat. 64, admitted 1818, with mania epileptica, which appeared at puberty. Was found dead in bed, having apparently expired during a fit of epilepsy, October, 1830.

Autopsy. Head.—Remarkable conformation of the cranium, being very full and prominent behind, and much compressed at the sides; left hemisphere of the brain much fuller than right; great venous turgescence; but no increased vascularity.

Chest.—Lungs gorged with a sero-sanguinolent fluid. Left ventricle of the heart hypertrophied.

3. George Thompson, ætat. 28, admitted 1823, in a state of fatuity, and died July, 1830, with symptoms of phthisis pulmonalis, having greatly recovered his intellectual powers a day or two before death.

Autopsy. Head.—Presented nothing unusual.

Chest.—Numerous tubercles in both lungs in different states of softening.

Abdomen.—Incipient thickening and ulceration of the mucous membrane of the ileum and colon.

4. Isabella Ross, ætat. 50, admitted July, 1829, with maniacal excitement, and in the course of a month lapsed into fatuity, and died April, 1830, with general dropsy and diarrhoea ; had been long addicted to indulgence in spirituous liquors before admission.

Autopsy. Head.—No appreciable lesion of the brain or its membranes.

Chest.—Tubercles and vomicæ in the superior lobes of both lungs, with serious infiltration.

Abdomen.—Liver exhibited the friable granular bright yellow degeneration ; ulcers of a small oval shape throughout the ileum ; the mucous membrane of the cæcum and colon was remarkably thickened, rugous, fungoid-looking, and of a dark colour, and presented here and there large, foul, irregular ulcers : the cells of the colon were obliterated.

5. Peter Keith, ætat. 66, formerly a seaman in the navy, admitted September, 1829, with monomania elata, and imperfect paralysis of all the voluntary muscles, which increased to complete paralysis sometime before his death, which happened January, 1831. He had been addicted to spirituous liquors.

Autopsy. Head.—Copious gelatinous deposit over the entire surface of the brain, forming a layer of some thickness over the anterior lobes. Between the middle and posterior lobes, and near the surface there was situated an irregular cavity with vascular parietes, containing the debris of softened cineritious substance. The ramollissement extended to the medullary substance, and there was a well-marked approach to ramollissement of the whole cerebral mass, especially of the cineritious part.

6. James Simpson, ætat. 38, a seaman, admitted February, 1831, with maniacal delirium, very much resembling delirium tremens in regard to the nature of the delusions, the profuse perspirations and the constant pervigilium which were present throughout, though the tremor was absent. After

a period of nearly three months he died in the last degree of emaciation, uncontrollable diarrhoea having supervened. He suffered two attacks of epilepsy, followed by strabismus some time before his death. Was reported to have been habitually sober, but experienced the above attack immediately after a fit of intoxication.

Autopsy. Head.—Well-marked increased vascularity of the pia mater, with great effusion into the ventricles.

Abdomen.—Inflammation and ulceration of the colon.

7. George Dawson, ætat. 38, a shop porter, of plethoric and apoplectic tendency, having suffered a slight shock four months previously. Admitted November, 1830, under great maniacal excitement, which gradually arose to the most violent delirium, under which he sunk exhausted in the course of a month.

Autopsy. Head.—Slight albuminous effusion under arachnoid, confined to anterior and upper part of the hemispheres : much turgescence of veins of pia mater.

8. J. G., a female, ætat. 20, admitted July, 1830, with monomania depressa, and died 22d of the same month, apparently of exhaustion, consequent on inanition from abstinence, previous to admission.

Autopsy. Head.—No morbid appearance discernible ; vessels of mucous membrane of ileum arborescent.

9. M. M., a female, ætat 72, admitted in 1808 with monomania elata ;—died 1831, with symptoms of œdema pulmonum, having had anasarca of the lower extremities for some weeks.

Autopsy. The different cavities exhibited no morbid appearances, with exception of great condensation and hepatization of the whole of the right lung, with two quarts of serous fluid in the sac of the pleura of same side.

10. I. B., ætat. 83, admitted 1812, with dementia senilis—general paralysis having gradually supervened. Died 1831, with symptoms of pneumonia.

Autopsy. Head.—Very copious effusion of serum over the entire surface of the brain, and into ventricles and sheath of the spinal chord, amounting to at least five or six ounces.

Chest.—Lower lobe of left lung in a state of great engorgement and hepatization; passing into purulent infiltration. Hypertrophy of left ventricle of heart.

11. Margery Grant, ætat. 82, admitted 1816, with dementia senilis. Died September 1831, having suffered from occasional severe attacks of diarrhoea.

Autopsy. Head.—Nothing morbid observed.

Thorax.—Upper part of the right lung tuberculated.

Abdomen.—Ulceration of ileum and colon.

12. Alexander Robertson, ætat. 41, a plumber, admitted February 1830, labouring under a state of great fatuity and general paralysis, constant tremor of the hands, and loss of speech; all of which symptoms followed upon an attack of apoplexy which occurred three years previously. Had been much subject to head-aches, and was reported to have been habitually sober. Died Nov. 1831.

Autopsy. Head.—Highly vascular layer of dense but recent lymph under the dura mater, covering the whole of the right hemisphere, varying from three to four lines in thickness, and causing adhesion of the membranes. Great vascularity of the pia mater, extending to the base of the brain and between the convolutions. Ventricles greatly distended with serum. Thoracic and abdominal viscera quite healthy.

13. J. W. ætat. 50, admitted 28th October, 1831, with hypochondriacal monomania, and exhibiting great emaciation, complete anorexia, much uneasiness of the epigastrium and parched, smooth, florid tongue. Died on the 16th November following.

Autopsy. Head.—Pia mater rather vascular, but no effusion over the surface or into the ventricles of the brain.

Thoracic and abdominal viscera

healthy—the liver only containing two small tubercular masses. The whole tract of the alimentary canal was particularly examined, and exhibited no vascularity or other lesion to correspond with the symptoms of epigastric uneasiness, the state of the tongue, &c. during life.

I have given the foregoing abstract without commentary, and the only remark I would now venture is, that the nervous system still presents a wide field for pathological research, and which must be carefully explored, before we can pretend to assign to each case of insanity its true relations, and to draw any thing like general conclusions regarding the nature of those lesions which give birth to this disease in its varied aspects.

It appears to me that too much has been ascribed by recent pathologists to increased vascularity of the membranes, an appearance often doubtful and difficult to decide upon, and at all events often incidental to the morbid actions immediately preceding death; and that too little is allowed to the probable lesions of the nervous mass itself. We know that the intellectual functions are sometimes restored shortly before death, and that the accession and removal of the disease is not unfrequently sudden; we ought not therefore to anticipate on all occasions well-marked structural derangements. Insanity, indeed, may originate in different pathological conditions of the encephalon. And these conditions are no doubt, in some instances, associated with increased vascularity of the membrane, giving rise, I suspect, in the end, to the immense collections of serum not unfrequently observed in the brain of those who unhappily so often pass by degrees from the state of maniacal excitement into that of fatuity, with paralysis, complete or partial—collections by the way which seem to be formed slowly, if we may judge from the increased firmness and density of the parietes of the ventricles, their not collapsing on being evacuated, &c. and which therefore do not prove suddenly fatal. In the one half of the above cases, however, no increased vascularity or effusion could be discovered

though carefully investigated. Moreover the treatment which is recommended and usually found successful in cases of meningitis, when applied to insanity, even when the head symptoms appear best marked, is not in general followed by corresponding good effects, but, on the contrary, will sometimes prove highly prejudicial.

Note.—These examinations were conducted in the presence of professional friends—this I mention lest it should be supposed that my sense of vision was obscured in obedience to any theoretical bias.

Aberdeen Lunatic Asylum,
9th January, 1832.

VII.

1. **ESSAY ON CHOLERA, FOUNDED ON OBSERVATIONS OF THE DISEASE IN VARIOUS PARTS OF INDIA, AND IN SUNDERLAND, NEWCASTLE, GATESHEAD, &c.** By JAMES ADAIR LAWRIE, M.D. Professor of Surgery, Andersonian University. 8vo, pp. 93. 2d Edition. Feb. 1832.

2. **HINTS ON THE PRACTICABILITY OF CONTRACTING THE EXTENSION AND GREATLY DIMINISHING THE FATALITY OF THE MALIGNANT CHOLERA, &c. &c.** By DAVID B. WHITE, M.D. one of the Physicians to the Gateshead Dispensary, and Cholera Hospital. 8vo. pp. 40. Feb. 1832.

THE Cholera has spent its force at the towns in the North, from which these pamphlets have emanated, and from which many others will probably spring. When the cholera was said to be coming, our tables groaned with works of all sizes and descriptions, some from men who had seen the disease, the majority from those who know practically nothing whatever about it. The latter were ever the most violent advocates of contagion, and settled its laws, and laid down charts of the march of the malady with most amusing and grave precision. But now, in some parts of the country, the pestilence may be said

to have been and gone. We have therefore an opportunity of obtaining some real and sober information respecting this horrid fiend, this raw-head-and-bloody-bones of alarmists in the profession and out of it.

The first pamphlet on our list, is from the pen of Dr. Lawrie, who had an opportunity of seeing the Indian cholera in Bengal, and of comparing it with what he has witnessed in the North of England. Its introduction into Newcastle and Gateshead, and Kirkintilloch, and its actual characters in those towns, form the principal objects of his attention. The first point touched on is, the laws regulating the propagation of cholera. It appears that our author, though always a very cautious and moderate advocate of contagion, has found reason to moderate his sentiments on that head still further. He thinks there is every reason to believe that cholera "is not a very contagious disease." Not a single medical man has been affected with it in Sunderland, Newcastle, or Gateshead, nor have any of the professional visitors suffered, though circumstances would seem to have rendered them most exposed and even predisposed. Typhus, in Scotland, has been infinitely more destructive to our brethren, the larger majority of those dying in Glasgow being supposed by our author to be carried off by this scourge! "Can we avoid the conclusion," says Dr. Lawrie, "that cholera is a much less contagious disease than typhus?"

"Of the nurses and other attendants on the sick, only two have had the disease, and one died. Both cases occurred in Sunderland, and as the nurse who died was one of the very earliest seizures, it is highly probable that she caught the disease, in her own house, and not in the hospital. This remarkable immunity of the nurses strongly confirms the statement, that the disease is not actively contagious, because they sleep, (as I have daily seen them do) in the Sandgate Cholera Hospital, in the same room, and in the next bed to four or five patients labouring under the disease. It also casts a very strong doubt on the favourite doctrine of the

predisposition of the poorer classes. The nurses are often taken from the very humblest of these classes, and are generally intemperate; and yet they escape. On the whole, the experience of England satisfactorily proves, that Cholera is a much less contagious disease than Typhus Fever, and that in this respect it bears no comparison with Scarlet Fever and Small-pox."*

This is a point of such importance, that we shall advert at once to Dr. White's opinions on it.

"The hand of charity has, however, been too often paralyzed by the terrors of contagion. What danger may arise amongst the poor, with all their predispositions from exposure to the Cholera, I will not pretend to determine; but of this I am certain, that amongst the class upon which the duties of benevolence must devolve, where the health is good and the mind firm, there is no peril. I have visited the Gateshead hospital during the time I had the honour of being physician to that institution, under all circumstances of physical depression; I have breathed the atmosphere of its apartments for hours together; yet I, the attendants, the nurses, all equally exposed, have equally escaped. Not a single individual in the profession has sustained an attack since the disorder has prevailed."

We shall here make a leap to the concluding part of Mr. Lawrie's pamphlet, in order that all the evidence and opinion respecting contagion may be disposed of in this place. We pass then to the Appendix, in which the mode of origin of the cholera in Kirkintilloch is discussed. Kirkintilloch is a small borough, containing about 4000 inhabitants, situate eight miles Northeast of Glasgow, on the North bank of the great canal. Hillhead is a village containing 330 inhabitants, about half a mile from the centre of Kirkintilloch, towards the East, situate on the verge of the South side of the canal.

* "Before visiting Sunderland, Newcastle, and Gateshead, I considered Cholera to be nearly on a par with Typhus Fever in point of Contagion.—Vide *Glasgow Med. Jour.*"

"Previous to Sunday the 22d January, no peculiar disease prevailed in Hillhead; on that day a boy named M'Millan was taken ill while in church, with symptoms of Cholera, and died early on Monday. Three other persons, Mrs. Semple, Mrs. Kinniburgh, and a boy (Morrison,) were taken ill in rapid succession, and all died before Wednesday. Up to Friday, 3d February, upwards of thirty have been attacked, and eighteen have died. The boy M'Millan had not been on board the vessels on the canal nor come in contact with any part of their cargoes; neither had he committed any error in diet.

The origin of the disease in Kirkintilloch has excited some discussion. At first it was confidently attributed by the authorities and people on the spot, to animal matters brought by ships from Hull, Edinburgh, and London, for the use of a manufactory in the neighbourhood. From inspection of the Harbour Master's books, I found that on December 22d, 1831, the Sibilla, Wm. Cowan, from Hull, discharged on the wharf at Hillhead, 3 tons 12 cwt. of horn-shavings, loose; supposed to have come from St. Petersburgh. A portion of these was carried to Port Dundas, and in a few days re-shipped to Hillhead, in the Lady Augusta, Sharp. They were soon afterwards removed. On January 16th, the Delight, Primrose, brought hoofs in hogsheads from London, which were not emptied on the quay, and were removed on the 18th, four days before the disease broke out. When we consider that the supposed offensive matter from the last vessel was not emptied on the quay, that it came from London, and that the men employed in landing and conveying it to the manufactory, and working it there, have remained in health, there seems no reason for attributing the introduction of the disease into Hillhead to the horn shavings. By some it has been said that Cholera may have been brought from Newcastle, by the regular traders between that town and Port Dundas. On this point I have obtained the following information. The Anne left Newcastle, December 31st, 1831,

underwent ten days' quarantine, and arrived at Glasgow on the 14th January, leaving no cargo at Hillhead. She was the latest vessel from Newcastle before the 22d; *the Dulcinea passed on the 29th.* No goods from Newcastle have been discharged on the wharf during the month of January. *The Harbour Master's books show no other source from which the disease could have been introduced."*

Such is the evidence for contagion and importation in the case of this town and village. What desperate shifts its advocates and the deluded populace are driven to, when they fasten on a cargo of hoofs from London, where the cholera was not, for the importation of the nova pestis into Scotland. But it is of a piece with the other statements of this description.

" If, as there is every reason to believe, the disease was not imported, whence came it? I think we cannot avoid the conclusion that the poison producing it was generated on the spot, by causes similar to those which produced it at Jessore in Bengal, in 1817; adding another proof to the many already before the public, that Cholera can be produced by other causes than a specific contagious virus. If asked why it never appeared before, I can only say that the same causes could never have been in operation, and may retort by asking why it appeared at Jessore (in India) in 1817, instead of 1816, or any previous year. This is in truth confessing our ignorance of the precise cause of Cholera; at the same time there is no want of the general causes of disease at Hillhead. There has long been a disposition in the West of Scotland to bowel-complaints, the weather has been very different from that of ordinary seasons, Hillhead is situated within a few yards of the canal, is damp and dirty, and the people are poor and in want of the comforts and many of the necessaries of life. There is every reason to believe that a combination of causes analogous to these, generated Cholera in India, and why not at Hillhead? Add to this, that the wind for some time has blown steadily across the canal on the village."

The thick-and-thin contagionists scout this reasonable argument; they make the disease originate in one place, but cannot permit it to spring up in another. In the village of Hillhead it was singularly confined to one locality, commencing in the house of a weaver, near the centre of a row which fronts the canal, and being confined to eight houses, all within eighty yards of the first. In these houses sixteen persons died—two others perished who were exposed to their atmosphere—and several within them recovered from severe attacks. To render it probable that this limited locality of the malady is to be explained by endemic causes rather than by contagion, Dr. Lawrie adduces the following facts.

" 1st. No communication could be traced between many of the persons who died, and those previously labouring under the disease. Major Berrie's gardener assured me, a few hours before his death, that he had not seen any of the people who had been attacked, nor been in their houses. The man Watson was afraid of the disease, and sedulously avoided those who were labouring under it. 2d, There has been constant communication between Hillhead and Kirkintilloch, but the disease has not, hitherto, appeared in a decided form in the latter place. 3d, Patients labouring under the disease, have been carried from Hillhead to Kirkintilloch, and have died there, but the disease has not spread in the neighbourhood. Of this, there were two examples. After the death of Robert Gardiner, and his daughter, his wife removed, with four children, into the house of Mrs. Horn, her mother, which is situate in the centre of Kirkintilloch. This abode consists of one room, not twelve feet square, in which three or four persons resided, previous to the arrival of Mrs. Gardiner and family. Three of Mrs. G.'s children were labouring under Cholera. The child first attacked died; the two others passed through a severe form of the disease, but not an individual of those residing in the room, or neighbourhood, were infected. I cannot help thinking that the lives of the two children who re-

vered, were saved by removing them from the house in which their father and sister died. The second instance is that of Mary Brown who went from the centre of Kirkintilloch, to wash the clothes and house of Mrs. Dunn, who had died of Cholera. She remained some hours about the premises, returned to her own house, took Cholera, and died; but not one of her neighbours have been affected. Except the two last mentioned, no death from Cholera has occurred in the town of Kirkintilloch."

These facts seem to Dr. Lawrie to point strongly to a local cause, and to prove that cholera is only contagious within certain limits, well expressed by the name "cholera atmosphere." He thinks that the causes of cholera consist, 1st, Of this peculiar atmosphere : 2d, Of miasmata generated in certain localities, which, under the influence of the atmospherical constitution, produce the disease : 3d, That probably the bodies of those labouring under the disease, or who have died of it, may generate a poison, which, within the range of this atmosphere, may become a cause of cholera. This amounts to mighty little in favour of contagion. By the way, we may here advert to what is asserted by Dr. Lawrie and others, respecting exposure to this atmosphere. "Mendicants from Edinburgh visited places in the neighbourhood, imbibed the local poison, returned and died, but did not communicate the disease to those around them." Thus a small dose of the choleric atmosphere appears to have done for these unfortunate beggars, whilst doctors and nurses have lived and slept with cholera patients, exposed, we must suppose, to the atmosphere, bad as it might be: the medical men have also been in close communion with them *after* death, when their bodies are thought to be capable of generating a poison, and yet neither nurses nor doctors, so exposed and so situated, have suffered from cholera. So difficult is it to decide on the *laws* which regulate its propagation and subject men to its influence. From the opinions and facts already stated, Dr. Lawrie draws the following practical conclusions. --

"1st. When Cholera shews itself in any locality, instead of drawing a cordon around it, cutting off all communication with the inhabitants, and confining them to the contaminated spot, *they should be encouraged to leave it and disperse themselves in healthy districts*; their houses should be shut up for two months, and afterwards washed and fumigated."

2d. Dr. L. strongly recommends the formation of cholera hospitals.

"3d. It is exceedingly improbable that the poison of cholera can be carried on the persons or clothes of individuals passing from a contaminated to a healthy atmosphere. From theory, I should say it is *impossible*, and I am not acquainted with a single unexceptionable instance, which can be adduced in support of the opposite opinion.

4th. There is no reason to believe that the poison can be carried in manufactured goods. I call on those who dispute this conclusion to adduce a single well authenticated instance in support of their opinion.

5th. Local quarantines are at once unnecessary and injurious. I trust I have already shown that they are unnecessary, and, surely, I do not require to prove to the manufacturing population of the west of Scotland (in the hope of benefitting whom I have assiduously studied this subject,) that quarantine must be ruinous to the places subjected to its rigor, and injurious to the whole community. Theory tells us that cholera cannot be conveyed in fresh goods, and experience teaches us that quarantines and cordons are powerless in restraining its eccentric, but persevering and uninterrupted march. Why, then, should Governments, proceeding on false principles, inflict on their subjects the unspeakable calamities of local cordons? or why should communities, startled by unfounded fears, injure themselves and their neighbours, by interrupting that free intercourse between districts, on which the well-being of the whole so essentially depends? This subject is highly interesting to all maritime and manufacturing countries, and, at the present crisis, is unfortunately, peculiarly so to the populous

districts of the west of Scotland. In refusing to receive goods manufactured in any village in their vicinity, the parties inflict additional privations on the already suffering operatives, and acknowledge a principle, which, by extension, will impose a quarantine on all vessels from the navigable rivers of Scotland. Who can calculate the misery,—the destruction of life,—which such a measure must entail? or could any means be imagined better calculated to multiply the victims of that terrible pestilence, in the hope of checking whose progress, it is likely to be enforced. Restrictions, in every quarter of the globe, have been futile and injurious. What reason have we to hope that they will now prove efficacious? In truth they cannot. I do not ask enlightened mercantile communities to subscribe to the theories of any professional individual; but surely it is their duty, carefully to investigate principles, on whose truth or falsehood the welfare of millions depends."

With the foregoing sentiments we entirely coincide. But we do not expect nor imagine that governments can or will abolish external quarantine; it is an effort of firmness and liberality if they shun internal cordons. Can we fairly look for so much intelligence and courage in governments, when members of our own profession denounce the removal of every shackle as visionary and destructive, and urge on the rabble, high and low, to clamour and persecution against the devoted advocates of common sense? When will the spirit be extinct that animated the torturers of Galileo? Never, whilst sordid jealousy and grovelling ambition are qualities of vulgar minds. The age is not yet sufficiently enlightened for a calm and dispassionate consideration of the question of quarantine.

Having thus disposed of the question of contagion, so far as our present authors touch upon it, we return to the commencement of Dr. Lawrie's Essay, and proceed with our summary of his opinions. The second law which regulates the propagation of cholera, is that it possesses an epidemic character. On this we need not dwell. We may men-

tion some facts respecting that sudden and virulent onset of the disease at Gateshead, which excited attention and surprise.

"Gateshead lies on the right bank of the Tyne, opposite to Newcastle, with which it is connected by a bridge. The population of the town of Gateshead is probably 10,000, and of the whole parish 15,000. The communication between the towns is necessarily very great. Up to the 25th December only two cases of cholera had occurred in Gateshead, although the disease had prevailed in Newcastle for eighteen days. On the evening of the 25th December cases began to be frequent, and by ten o'clock on Monday morning, forty had been seized, and ten had died. At ten o'clock on the 27th, (Tuesday,) there had been ninety-nine cases and forty-two deaths from the Sunday evening. A most intelligent man, a member of the Gateshead Board of Health, assured me, that he had ascertained by personal research, that the disease *had shown itself almost simultaneously in a tract of country three miles and a half around Gateshead.* I visited patients in Gateshead-fell, three miles from the town, on Tuesday morning. *In one small village there had been ten cases and five deaths.* The sudden appearance of the disease in Gateshead was attributed to various causes by those who derided atmospheric influence. The favourite theory was, the dissipation of Christmas-day. Was Gateshead the only dissipated place in England on that day? The low part of Newcastle was equally so, and yet a population of 70,000, presented on the morning of the 27th December sixteen cases, a population of 10,000, forty. It was alleged by many, that the wind suddenly changed on Sunday, and blew during the night from Newcastle. How far this is accurate, I am unable to say; if true, it is possible, that the contagious effluvia may have been borne on the wind from Newcastle, and spread in Gateshead, a soil prepared for their reception. At the same time, when we consider that the alleged change of wind has not been accurately ascertained; that the disease was by no

means virulent in Newcastle at the time ; and that cholera has frequently spread in opposition to prevailing winds, the conclusion seems quite legitimate, that it affords an instance of its epidemic character."

3d. Our author assigns to cholera a temporary endemic character : i. e. a temporary residence in certain localities to the exclusion of others. Thus, Sunderland, Newcastle, and Gateshead are all situated on the banks of a river, and the poorer inhabitants, who were chiefly affected, dwell in narrow, filthy streets, on the same low banks. Dr. L. contends that the poor and dissipated are not so exclusively chosen by the disease for its victims as is supposed.

"A viewer's family, in every way highly respectable, and comparatively wealthy, was the first attacked at Seghill, and suffered severely. The viewer's house is exceedingly good, of one or two stories, and remarkably neat—but placed close on the bank of the rivulet already alluded to. The pitmen, as I have already stated, are not poor, and not very dissipated ; and I met in Gateshead with the disease in young and most respectable females, in whom no personal predisposing cause could be discovered. 2dly. It is a remarkable feature of the Newcastle and Gateshead disease, that very many children, several at the breast, and numbers under six years were attacked with the disease, and that the vast majority of the cases were females. In every locality the females were as two or three to one male, and in some as high as six to one. If the abuse of ardent spirits is to account for the prevalence of the disease among the poor, the proportions ought to have been the reverse. 3dly. The fact already stated regarding nurses, militates strongly against predisposition. 4thly. One of the localities of the disease in Gateshead bears on this subject. Pipewellgate, is a street running along the right bank of the river upwards from the bridge, one side consists of houses placed next the river, the other of houses built against a damp steep bank. Many cases occurred in this street, and almost all of them on that side built against the bank

and farthest from the river,—there were very few on the opposite side of the street. 5thly. The greater number of seizures took place during the night and towards morning, a fact more corroborative of endemic than personal predisposition."

4th. Cholera is capable of being borne for distances by the wind. Capt. Dunlop communicated the following fact to our author.

"In Madras Roads, in November 1821, while I was in command of H. M. Ship Curlew, we were lying with several other vessels, well out in the roadstead, which was filled with shipping. In the course of the night, the wind blowing obliquely from the western end of the anchorage, all the vessels in the centre were visited with cholera of the most malignant character, and lost several of their hands, while those ships in shore, and those in the outer line sustained no injury. Cholera was at the time partially on the coast."

4th. Predisposition occupies Dr. L.'s attention. He thinks that confusion has arisen from susceptibility and predisposition not having been properly distinguished. Susceptibility is that state which renders the individual liable to small-pox, scarlet fever, &c. and is destroyed by one invasion of the disease. This is independent of any perceptible derangement of organs or functions. Predisposition implies such derangement, rendering the body liable to certain diseases, by which it is not only not destroyed, but frequently greatly increased. Dr. L. thinks that, with this understanding of the foregoing terms, neither is strictly applicable to the liability of many of mankind to cholera ; a kind of negative piece of information which renders us little wiser than we were. The following will afford a commentary on our text.

"One family in Gateshead consisted of four young women, apparently of sound constitution, and highly respectable ; the eldest was in perfect health

* "Letter from Capt. Dunlop, R. N. to the author."

—the second was feeble, in consequence of a late severe illness—the two youngest, the one thirteen, the other fifteen, were in perfect health on the 25th December. The two youngest were seized with cholera on the 26th, the two eldest living and sleeping in the same house escaped. The history of this family is that of a thousand others. Susceptibility and predisposition alike fail us. The explanation must be sought for, by supposing that the two youngest had imbibed a dose of the poison of Cholera, sufficient to produce the disease, while the two eldest had not been exposed to it, or had not imbibed it. At Gateshead-fell, I found in one family the father recovering from an attack of Cholera, one of the family in his coffin, the mother and daughter in bed, ill of the disease. The father told me that he had the night previous been suddenly seized with diarrhoea—he left the house for a few minutes, and on his return three of the family were almost instantaneously seized with Cholera. Before morning one was dead. In a second house, I found two dead and two in bed. The probable explanation is, that all were equally exposed to the same local cause, and that the attacks were independent of predisposition."

One would conclude, from this passage, that Dr. L. conceives that those take it who receive a sufficient dose, and those who do not receive that dose escape. But then how are we to explain the circumstance of the disease being nearly confined to certain classes, and the immunity of medical men and nurses in the north of England? Our author, however, appears to abandon his own position, for, in the next paragraph, he makes predisposition consist in two causes: 1st, The indirect, whatever weakens or injures the health—dissipation, poverty, &c. 2d, Whatever impairs the actions and functions of the organs implicated in this disease, as errors in diet, saline purges, extreme cold. He also conjectures that disease of the mucous membrane may be a predisposing cause. But it is evident to us that, independent of the application of predisposing and exciting causes, there

must also be in mankind a degree of susceptibility and insusceptibility, else the disease would not be checked at the limits we have seen, amongst the poor, the wretched, and debauched.

"Does fear predispose to this disease? I do not believe that fear ever gave a man Cholera, or ever will. To the production of Cholera a regular chain of causes and effects is as necessary as to poisoning by prussic acid. The inhabitants of Gateshead fell asleep on the 25th December, in perfect security and devoid of panic, but before the sun rose on the 26th, fifty-five individuals had been seized, thirty-two of whom were destined not to see it set. For several days subsequent to the 27th, the panic of the inhabitants was greater than I have ever witnessed under any pestilence, while the new cases decreased, and on the 30th were as low as 20."

This does not appear to us to be very good reasoning. Dr. L. makes debilitating causes predisponents, yet terror, which is the most enervating of all, is proscribed. Fear, says he, never gave man the cholera. That is not the question. Does it render man more liable to it? If it does not, and that it does we have had on many sides ample testimony, we may venture to affirm that cholera is the first epidemic, in the history of the world, in which the passion of fear has exerted no influence. Dr. L. en passant, alludes to the filth and wretchedness of the English towns which have suffered, and to the greater filth and wretchedness of the Scotch, whose turn is perhaps to come.

Dr. Lawrie makes a few judicious observations on civil police. The aim of Government should be, to open the dense buildings of large cities, prohibit the habitation of cellars, enjoin cleanliness and ventilation, and improve the moral condition of the poor. Aye, there's the rub. How can Government compel landlords to build commodious houses for those who cannot pay for them; how can it prevent over-crowding, and consequent filth, in the abodes of those whose squalid pauperism prevents them from faring otherwise than hogs in styes? Public nuisances, and open ex-

hibitions of filth and nastiness, a Government may prevent by an active police, but private property and private misery have too deep roots in this land of aristocracy and starvation, to be reached by all the powers of Crown and Parliament.

Dr. L. strongly recommends the formation of a hospital *before* the disease is established, for if delayed till then, it is created in panic and confusion, and is productive of little benefit.

"Every town, in which there is a sufficient number of medical men, should be divided into districts, and medical men put in charge of them; and an hospital or hospitals, according to the size of the town, provided in healthy situations. A private dwelling, school-room, or dry barn may speedily be converted into a commodious place for the reception of Cholera patients. If possible, it should have two sets of wards, one for the reception of those in the state of collapse, a second for those in the febrile stage. The furnishings should consist of wooden bedsteads three feet wide, mattresses made of coarse cloth stuffed with kiln-dried straw, sheets, and abundance of blankets. When a patient dies, the straw should be burnt and all the bedding washed. Each ward for the reception of patients in the stage of collapse, should have a stove and a large fire-place to keep up a high temperature, and enable the nurses to procure with facility the means of applying external heat. In this disease, assiduity will often supply the place of skill, and proper measures are more likely to be adopted, when the means of applying them are at hand, than when they require to be sent for. If possible, each hospital should contain accommodation for a resident house-surgeon."

The observations on the proximate cause of the disease must be passed over; in fact, we fear we have devoted already too much space to this pamphlet. We proceed to the consideration of the symptoms and treatment, on which we shall be as brief as possible. Cholera is divided by Dr. L. into common, spasmodic, and malignant, all belonging to the same order of disease, met with in the same epidemic, differ-

ing only in degree. Passing over the two first, we find that Dr. L. divides the malignant cholera, as he saw it in the north of England, into five stages : 1, The premonitory : 2, The acute : 3, The collapsed : 4, The rallying : 5, The febrile.

The premonitory consists essentially of diarrhoea, with a slight degree of the cold stage, malaise, and perhaps spasmodic twitchings of the limbs. This stage varies from a very few hours to two, four, or even six days. The acute stage is always rapid, though varying in its symptoms. In some, it consists of a very sudden increase of the preceding symptoms, and the stage of collapse speedily supervenes. In others, there is vomiting as well as purging, acute spasms, thirst, often acute spasm at the pit of the stomach, and almost constantly a burning, unquenchable, gnawing sensation; the pulse continues good, and the surface is not very cold. The face becomes more sunken and anxious, and the patient is very restless. Respiration is rather slow, the secretions are diminished, that of the urine suspended, the skin clammy, sometimes perspiring profusely, the voice husky. A vein opened yields blood freely. This stage may be very short, or some hours may elapse before collapse be fairly established. In some instances, the attack is instantaneous, the patient falling senseless, and recovering to be plunged into more prolonged agony. The fact is, that the modes of attack are various, and the symptoms differ in different cases. Our author gives a powerful and graphic description of the cold stage; we regret that we cannot convey it to our readers, but our space is so limited, and this stage has already received so much and such general attention, that it is unnecessary to dwell upon it.

"The majority of medical men affirm that the mind is always unimpaired. I can only say that it appeared to me in many cases affected, to a degree little short of what we find it in concussion of the brain, probably owing to congestion in the vessels of the head. I remarked this particularly in several children. When undisturbed they lay

in a dull sleepy semi-comatose state, breathing with perfect calmness. When roused, they thought only of relieving their distressing sensations, and vociferated for cold water. I had at one time five of the same family in one bed, all calling loudly for fluid to allay their burning thirst. So urgent were they, that they could be bribed to swallow any medicine, by the promise of a mouthful of cold water. When appeased, they relapsed into their previous sleepy condition.

It is hardly necessary to say, that confirmed collapse is a state of extreme danger, and that it is it which destroys the vast majority of Cholera patients. The cause of death, in many cases, is a failure of the functions of animal life alone ; in others, affection of the brain, induced either by venous congestion or the absence of arterial blood, hastens the fatal termination.

I am borne out in this last view of the cause of death, by the fact, that, although the powers of animal life are first affected, they are in some cases the last destroyed. Convulsive movements are common after mental life is quite extinct ; and, as I formerly remarked, it is almost impossible to say at what moment the vital motions have ceased to vibrate. A body lies apparently lifeless, suddenly a convulsive shudder shakes it ; its hands are clenched, if you put your own within them, and force them open, they shut again with a spasmotic catch. It is not to be wondered at if these appearances have a powerful effect on the superstitious feelings of the uneducated, and make them averse to very early interments."

The 4th stage is that of rallying. Sometimes, but these are the exceptions, it is complete and rapid ; usually it is of some hours' duration, nay, even of two or three days, and the animal powers seemed placed in a delicate balance. In some of the most rapidly fatal cases, Dr. L. has seen the heat partially return to the surface, the pulse flicker, and sensation slightly restored, immediately before death.

"5th. Febrile Stage. A patient who has entered the stage of collapse, is rarely restored to health, without pass-

ing through a fever closely resembling typhus. My residence in Newcastle was too short to enable me to say from personal observation, what is its usual duration, but I understood that it varied from seven to fourteen days. The ordinary cases present no peculiarity of symptoms, which could distinguish them from those of common continued fever. At first I thought the tongue cleaner, and the pulse less rapid ; but more extended observation showed, that these, especially the clean reddish tongue, are occasional, but by no means invariable symptoms.

Congestion of particular organs is met with at the commencement or during the progress of the febrile stage. By far the most common is that of the vessels of the brain, marked by apathy, listlessness, dilatation of the pupils, suffused eyeballs, low muttering delirium, or total insensibility. The fauces, in some cases, in which the voice had been much affected, inflamed, and suppurated. Inflammation of the brain followed one case of inflamed throat. The chest I rarely found affected. The respiration in the febrile stage is usually healthy, and the lungs free from congestion. I do not pretend to say that affections of the chest have no place among the sequelæ of Cholera, but that I have not met with them.

"Congestions and inflammatory affections of the abdominal viscera are very frequent ; indeed it seldom happens that the functions of these organs are speedily restored. Under proper treatment the liver is not very obstinate. I thought affections of the stomach, probably its mucous surface, as indicated by troublesome retching and vomiting, and of the bowels, in the shape of constipation, fulness, and pain on pressure, much more common. The secretion of urine is restored, the skin assumes its ordinary hue, and attains a febrile heat. The recovery is progressive, as from continued fever."

Dr. L. considers the disease to be the same as the Indian cholera, but characterised by certain peculiarities which he enumerates.

"First, The premonitory stage occurs in a much larger proportion of

cases in the English than in the Indian disease. In the latter it was the exception, in the former it is the general rule.

Second, The febrile stage is incomparably more frequent. I have met with it in India, but it generally appeared to me to be connected with derangements of the abdominal viscera. In Sunderland and Newcastle the experience seems to be, that very few who have fairly entered the collapsed stage, escape the secondary fever.

Third, I think the head is more frequently affected in the British disease than in the Indian—as indicated by greater mental oppression and insensibility during the collapse, and more congestion in the febrile stage. In this last particular, I believe I differ from some other observers. I speak, however, of my own experience only.

Fourth, My observations would lead me to say that the frequent discolouration of the surface constitutes a fourth peculiarity. I neither met with it so frequently, nor to the same extent in India."

We pass to the treatment. Both Dr. Lawrie and Dr. White insist on the necessity of attending to the premonitory, or diarrhoeal stage. Dr. L. recommends the patient to be put to bed, kept warm, and to have a flannel band round his abdomen—then to take half an ounce of castor oil with fifteen or twenty drops of laudanum, and, after this has operated, thirty drops of laudanum, or one grain of opium. Saline and drastic purgatives are strongly deprecated. If the discharges continue, the opiates must be repeated with caution, and if two or three grains of opium fail, Dr. L. would open a vein, and in every case apply a sinapism or blister to the abdomen. If the above measures fail, and collapse threaten, he advises a mustard emetic, to be followed up by twenty grains of calomel, and as much laudanum or opium as the patient will bear. Opiate enemata deserve trial, and if opium has been pushed as far as is safe, mucilaginous enemata should be thrown up with a Jukes' syringe.

Dr. White remarks that in some cases, not diarrhoea, but obstinate costiveness

prevails, after a longer or shorter duration of which, the disease suddenly appears. For this costiveness he seems to recommend a pill of scammony, jalap, calomel, and aloes. In this stage Dr. W. also advises the washing of the body with warm water, and subsequent friction with coarse cloths. He seems to think that personal filth is a great predisposing cause. He orders his patients, on their retiring to bed, the lavation and rubbing—then the pediluvium and a pill of cal. prep. gr. vi. opii, gr. j.—in the morning castor-oil and laudanum, or pulv. rhei, 3ss. zinzib. pulv. gr. viij. to be repeated if necessary.

Treatment of the Acute Stage. Dr. Lawrie recommends a mustard or salt emetic, the former not too strong; he doubts their efficacy or safety when profuse vomiting of colourless fluid is a prominent symptom. As soon as the emetic has been swallowed a vein should be opened. His experience is in favour of bleeding, and, as a general rule, the earlier the better. In some cases it undoubtedly appears to do harm, and it is difficult to explain this discrepancy of effects. We may say that the earlier the better, that it is more safe in the robust, probably more safe after collapse than when it is just on the point of being established, and in the moderate than in the very severe cases. Such are Dr. L.'s notions. After these means we are to give a large dose of calomel and opium, to a stout man thirty or forty grains of the former within two hours. Of opium a large dose should be given at first with the calomel, and its repetition should be regulated by circumstances. Dr. L. strongly recommends counter-irritants to the throat, neck, spine, to the latter indeed the cauterizing-iron. Stimuli should also be given internally, if the stomach will retain them.

Dr. White thinks bloodletting has been too universally recommended. When vascular debility is very apparent he would not employ it, but when the pulse retains its force or rises during the operation, it is advantageous. Bleeding too he thinks an admirable sedative,

when great mental excitement prevails. He recommends the exhibition of cold water slightly coloured with brandy. He speaks well of cupping, external warmth, frictions for the spasms. He has found nothing but disappointment from the exhibition of stimulants; but speaks very highly of large injections of warm water.

Stage of Collapse. Dr. L. recommends warmth—an emetic as before—the abstraction of a few ounces of blood while the pulse can be felt in the brachial artery—then warm injections of beef-tea with brandy and laudanum—counter-irritation—diffusible stimuli—cold drink in its most agreeable form, for which, and for which only, the patient craves. All fluid should be given in small quantities at a time; thin arrow-root or beef-tea often remain on the stomach when nothing else will. External warmth is to be maintained by stoves or large fires in the room.

"A very simple method of heating a room, is an iron tube bent at its centre, the bent part converted into a small reservoir or worm. The reservoir is put into the fire and heated red hot; to the one end of the iron tube another of tin or of patent cloth is attached, and to its extremity a pair of large bellows. Air is thrown into the reservoir or worm, becomes heated, escapes at the opposite end, and is diffused through the room. One of this kind has been described to me; the principle might easily be improved into a very efficacious means of raising the temperature of a room or bed, to any required height. The air-bath is another means of applying heat to the surface generally, but air being a bad conductor must not be trusted to alone. Tin cases containing hot water, light and shaped to apply to any part of the body, are very useful for applying heat locally; to the same class belong bricks, bags of heated salt or sand, hot plates, and many others. My friend, Mr. Brady, at Gateshead, was in the habit of using bran mashes, for communicating heat to the surface, with good effect. A quantity of bran is put into a tub, and boiling water poured into it in such quantity as merely

to moisten it. It is then thinly spread in a bag sufficiently large to cover the whole body, and applied from the neck to the feet. It must not be applied too hot. This mode has the advantage of retaining the heat long, and is one of the best forms of moist heat which I know. If we wish to excite the surface powerfully, we may add spirits of turpentine to the bran. It is exceedingly difficult to prevent the patient from tossing in bed, withdrawing himself from the heated bags, and throwing off the bran and bed-clothes. A nurse must be constantly beside him to prevent this as much as possible."

When the perspiration is profuse and cold, it should be carefully wiped off with dry hot towels, and afterwards camphorated or ammoniated oils should be long and diligently rubbed on those parts where irritants are not applied. When the head and face remain deadly cold while the trunk and limbs are heated, it is a very bad symptom. It is singular that the patient dislikes the application of heated cloths, and begs for free cool air. Dr. Lawrie recommends the employment of galvanism, the agent to which we ourselves directed attention in our last number. He advises the application of the wire along the course of the eighth pair of nerves in the neck, and over the region of the heart and stomach. Dr. L. would be inclined to give calomel in moderate doses along with stimuli. Other means were employed with doubtful results Oxygen gas was given both by the mouth and by injection, but with very little benefit. It was recommended to throw large quantities of heated air into the bowels, but Dr. L. does not seem to have seen it attempted. Stimulating enemata of sp. terebinth. and mustard were used by some; they frequently produced irritation of the rectum and bloody stools; Mr. Baird, of Newcastle, used the tobacco enemata in one case of collapse with seeming benefit. Dr. L. tried it in two cases: in one it did no good, in the other it appears to have done harm. We think it a dangerous remedy, not warranted by principle and reasoning. When dogs are poisoned by tobacco in-

jections the symptoms are precisely those of cholera :—purgings, vomiting, cessation of the pulse, complete collapse. How such an agent should be likely to prove beneficial in cholera, we cannot so much as imagine.

Dr. Lawrie observes, that in the stage of collapse nature does and will do nothing ; perhaps the expression is too strong. If the following fact be one, it is instructive. A medical man left a cholera patient, saying that he could do no more for him, and that he must die ; another surgeon passing by accident, was asked to see him, worked hard for four hours, and saved him !

Dr. White's remarks on the treatment of this stage are brief.

" I have found the simplest, the most successful treatment :—the calomel and opium, the carbonate of ammonia, warm injections, stimulants as cordials, friction where necessary, and warmth, especially of a dry kind ; worsted stockings filled with hot sand, as I learnt from the practice of Mr. Knaggs of Gateshead, is admirably adapted for this purpose.

To allay the vomiting, as in the former instance, effervescent draughts, &c. should be used. A most salutary and speedy application, is by laying over the stomach pledges of linen, dipped in boiling water. Whatever may be the plan adopted, all unnecessary disturbance to the patient should be avoided. The death-bed is often rendered more agonizing by the mistaken, but well-intentioned, zeal, the benevolent officiousness, of inexperienced practitioners. An enema, consisting of a warm infusion of tobacco, half a dram to a pint, has been recommended by Mr. Baird. I have seen recovery in two apparently hopeless cases, in which this remedy had been employed."

Dr. W. makes a remark which is highly deserving of attention. When cholera first rages its inveteracy is greater than at a subsequent period, and remedies which utterly fail in the first instance, acquire a renown and celebrity when nature herself is at work to assist them. Dr. White speaks slightly of mustard emetics ; he has never seen them serviceable in the col-

lapsed stage, whilst in some instances they were incontrovertibly mischievous.

" Prior to death, when it takes place during this stage, the disease sometimes assumes a form, well calculated to deceive those not acquainted with its character. The pulse rises, the skin becomes warm and covered with perspiration, the patient expresses his relief, and, perhaps, his full anticipation of recovery : in an hour or two all is over. The blueness, so peculiar to this disease in other countries, has not been, by any means, a general characteristic in this. In not one instance in ten, has it assumed that form. The skin of the hands and face often becomes of a brownish hue. In the most deadly form of cholera, there is a tone of voice, a wail, which once heard, can never be mistaken ; to him, upon whose ear it has fallen in the accents of anguish, it can never be forgotten ; I have always found it the certain prognostic of death."

Here we see that the blue colour, the true blue, as the papers sarcastically term it, is not present in one case in ten. Yet this true blue is one of the pathognomonic symptoms that the ultra contagionists, that is, the thick-and-thin importation and nova pestis party, hold by as their sheet anchor. But what signify facts ? At the time we are writing, the 25th of February, the epidemic is stealing over this metropolis. We have seen many, indeed most of the cases that have hitherto occurred, but in no one instance could our eyes, unassisted by the spectacles of quarantine notions, and the mists of party feeling, discern any shade of blueness. That colour is seen in its deepest dye in the visages of contagionists and sycophants.

Treatment of the Rallying Stage. In this the surgeon is to watch nature ; to prevent the recurrence of collapse on the one hand, and ward off congestions of the head and viscera on the other. The first is avoided by external warmth and by giving warm arrow-root in moderate quantities ; the second by small doses of calomel, taking care not to push it too far. The head should be

shaved ; when the stomach continues very irritable, blisters and effervescent draughts with small quantities of laudanum are very beneficial.

Treatment of the Febrile Stage. When congestions do not occur, a few grains of calomel and small doses of castor oil and acidulated drinks are generally sufficient. In common cases the lancet is unnecessary, and when congestion threatens it is a hazardous remedy. Dr. L. mentions a case in which it appeared to re-induce collapse. When congestion threatens the head, which is the chief danger, blisters to the scalp or nape of the neck, preceded by leeches and cold lotions, and followed by calomel and mild purgatives are proper. The same principle applies to abdominal congestions. The patient often dies with the worst form of typhus.

Dr. White remarks in this stage the redness of the tongue ; he thinks this is the most proper time for the employment of the lancet with proper precautions ; when there is obstinate greenish sickness he has seen great benefit from the salt emetic, repeated till nothing but the solution is rejected. He draws attention to the peculiar tendency to affection of the head, insidious in its progress, and fatal in its tendency.

Dr. Lawrie concludes with a sort of summary of the history of the cholera as it has hitherto appeared in this country, and of the mortality relatively to other countries.

"Great variety has obtained in different parts of the world, in the proportion which those attacked with cholera bore to the population, and those who died to those who were seized. In some towns of Syria it destroyed one half of the population ; in Tripoli only 1 in 3,000 ! In India, the proportion of the troops exposed to those attacked, varied from 1 in 10, to 1 in 20 ; and the deaths, from 1 in 3, to 1 in 6 of those seized. Among the native population, many of whom were devoid of the necessities of life, and all of medical aid, the mortality ran as high as one half or two thirds. In Russia, according to Moreau de Jonnés, in five months, 1 in 210 of the population ex-

posed were attacked, and 1 in 350 died. The deaths amounted to three-fifths of the seizures.

In England and Scotland, from October 26th, 1831, to February 4th, 1832, 3,500 have been afflicted with cholera, and 1080, (less than one-third) have died.

In Sunderland, from which town the disease has now disappeared, 533 have been seized, and 210 died, affording a mortality of upwards of one-third. I have found some difficulty in ascertaining the amount of the population of Sunderland, but conceive that the town itself does not contain more than 20,000. On this calculation the seizures are as 1 in $37\frac{1}{2}$, and the deaths 1 in 95, of the population. We cannot arrive at any accurate conclusions regarding Newcastle, because the disease still prevails there ; up to the 12th January, however, the deaths are less than one-third of those attacked.

In Gateshead, from December 25th to February 3d, 399 have had cholera, and 142 have died ; the deaths continuing steadily more than one-third of the seizures. The parish contains 15,000 inhabitants ; consequently the seizures are more than 1 in 38, and the deaths rather less than 1 in 105 of the whole population.

From these data we may draw the following conclusions :—

First. The numbers attacked, in proportion to the population of the places infected, are more than five times greater in Sunderland and Gateshead than in the Russian dominions ; and the deaths to the population more than three times. The seizures are nearly one half less than among our troops in India.

Second. The proportion of deaths to seizures is $1\frac{1}{2}$ higher than among our Indian troops, and considerably lower than among the Russian peasantry.

Third. When we consider that this disease is limited to the inhabitants of certain localities, its effects on families must be fearful. It is no uncommon occurrence to meet with two, six, or even eight of the same family stricken with it, within a few hours. The picture is aggravated when we recollect that the disease selects its victims from

that class of the community, who are least able to sustain any addition to their misery.

Fourth. The statement, that cholera does not increase the bills of mortality, is not correct. The average number of deaths in Gateshead was nearly eighteen monthly. In that parish the deaths from cholera alone, in nineteen days, were $7\frac{1}{2}$ times that amount."

Here we must bring our analysis of these pamphlets to a termination. We have given a faithful account of the opinions and conclusions at which their authors have arrived. They are valuable, because they are the result of experience on our own shores, because they are the inferences drawn from the phenomena exhibited by the disease as it exists among ourselves, and because they present us with the sentiments of candid and unbiased men. To say that they support the opinions we have consistently and conscientiously advanced is nothing; but it is more to be enabled to assert, that they give weight and confirmation to the doctrines of moderate men. They contribute to establish the idea, that cholera is far from being so contagious a disease as to warrant those internal and external restrictions on commerce, which the Continental nations have hitherto universally adopted. They also support the doctrine of contingent contagion, that is, of contagion fostered, if not generated, in personal filth, unwholesome localities, and over-crowding of the famished, the miserable, and the dissolute. To assert that the disease is absolutely and unconditionally confined to such persons, is proved to be incorrect, but the general rule which makes it select such for its victims is no less fully established.

Men, sincere, perhaps, but ill-judging, have ventured to connect the extension of this too destructive malady with the special interference of that all-powerful Being, whose decisions are as wise as they are inscrutable. Far be it from us to speak lightly on a matter so serious, or on a subject referring to a source so awful. But we may be permitted to observe that it is presumptuous, at the least, for any man, or any

set of men, to attribute this or that infliction of evil to the particular wrath and interposition of the Deity. In the present instance, it is peculiarly dangerous thus—

To deal damnation round the land
On each we judge His foe !

The classes chiefly afflicted by God, are those already ground to the dust by man. The wretched, starving artisan: the blighted, shankless labourer: and their famished, half-clad families: these whose food consists of bad bread and potatoes—whose drink, of solutions of herbs which pass for tea, scorched grain for coffee, and of gin, when they can procure it; these, and such as these, are the victims selected by man for Heaven's displeasure. Alas for the oppressed and pauper population of this Empire! They are marked by misery and disease for their own—and the rich man wraps himself in his furs, and hugs himself that it is not he whom the Divinity has selected for extermination.

Before this article has seen the press, the practitioners of London will have had the opportunity of comparing their own experience with that of their brethren in the North. The epidemic is upon us; the modern Babylon, with its fifteen hundred thousand inhabitants; its squalid poor, its wretched alleys, its filth and splendour, misery and magnificence, is shadowed by the wing of the Angel of Death, and under the ban of the rulers of kingdoms. The cholera is in the mightiest city ever visited by pestilence; years have rolled aways since its inhabitants were decimated by plague and fire—the affluent have found new comforts, but have the poor been gainers? Events will determine the lot of the metropolis of the world.

VIII.

AN ACCOUNT OF THE BEULAH SALINE
SPA, AT NORWOOD, SURREY, &c. By
GEORGE HUME WEATHERHEAD, M.D.
Octavo, pp. 39. 1832.

It appears, by this little brochure, that the citizens of London have a good sub-

stitute for Cheltenham and Leamington within seven miles of Modern Babylon, above the fogs of the metropolis, where the air is pure, and the water highly medicinal. The Spa lies embosomed in a wood of oaks, open to the south-west, on a gentle acclivity, and commanding a very extensive and variegated prospect. The following extract will give our readers a knowledge of the chemical characters of the Beulah Spa, as compared with the Cheltenham pure saline springs.

"The water drawn fresh from the well is beautifully transparent and sparkling. Innumerable bubbles of fixed air are seen rising to the surface, when allowed to stand. Its taste is distinctly bitter, without being at all disagreeable, leaving on the palate the peculiar flavour of its predominant saline ingredient, the sulphate of magnesia. The temperature of the water, at the bottom of the well, is 52° of Fahrenheit; its specific gravity 1011; and, by an analysis of its composition by those distinguished scientific chemists, Messrs. Faraday and Hume, the following are the solid contents of a quart of the water:—

BEULAH SALINE.

Sulphate of magnesia.....	123
Sulphate of soda and magnesia	32
Muriate of soda	19
Muriate of magnesia	18½
Carbonate of lime	15
Carbonate of soda	3
Grains. . .	210½

CHELTENHAM PURE SALINE.

Sulphate of magnesia	22
Sulphate of soda	30
Muriate of soda.....	100
Sulphate of lime	9
Grains. . .	161

As a mean of comparison, the saline contents of a quart of the Cheltenham pure saline, as analysed by Mr. Brande, the predecessor of Mr. Faraday in the professorship at the Royal Institution, is placed opposite to the Beulah Spring,

to enable the reader to judge how much superior, as an aperient water, the latter is to that of Cheltenham. And, first, it may be observed, that the gross amount of the several salts, in the same quantity of the waters, is much greater in the Beulah than in the Cheltenham Spring, the difference being forty-nine grains and a half of solid saline matter in a quart—that is, the impregnation is nearly one-third stronger; and, secondly, the nature of the saline ingredients also merit observation. One hundred grains, out of one hundred and sixty-one, consist, as we see, in the Cheltenham, of muriate of soda, or common table-salt. Now, this substance, when perfectly freed from other salts adhering to it, possesses comparatively very feeble aperient properties; whereas the mass of the ingredients in the Beulah Spa is composed of two powerful saline substances, the sulphate of magnesia, and that peculiar double salt, the sulphate of soda and magnesia, constituting three-fourths of the whole saline impregnation."

We understand that a commodious hotel is erecting, in the neighbourhood of the Spa, for the accommodation of invalids: and we should not wonder if the Beulah waters attain a considerable celebrity, on account of their vicinity to the metropolis.

IX.

CHOLERA, AS IT HAS RECENTLY APPEARED IN THE TOWNS OF NEWCASTLE AND GATESHEAD; INCLUDING CASES ILLUSTRATIVE OF ITS PHYSIOLOGY AND PATHOLOGY, WITH A VIEW TO THE ESTABLISHMENT OF SOUND PRINCIPLES OF PRACTICE. By T. M. GREENHOW, (of Newcastle-upon-Tyne,) Member of the Royal College of Surgeons in London, &c. &c. &c. Octavo, pp. 162. London, 1832.

THE Cholera is in this city, and if any thing can compensate for this pest of the poor, it is that the fire-side travellers who prated so complacently of its whereabouts, have been the first to be

attacked with the cold tongue, blueness, shrunken features, and other characteristics of its stage of collapse. The ultra-contagionists are in a stage of congestion too deep, we fear, to be remedied by any stimulants. Time was, and the weeks that have slid away since that halcyon period are but few, when we saw them confident and triumphant in the public places. The societies then were their's, and the press was their's, and the public voice was with them, and the public panic was a pleasant thing to see, and who so elated as the contagionists then! The great men were very great, and their dependants were very happy, and in the fulness of their hearts they did what all other zealots have done, they denounced man's vengeance and heaven's displeasure on those whose creed was not fashioned by their own. The moderate party, if a party moderate men can ever form, were held up to scorn and derision and insult, and their opponents openly thanked God, as the Pharisee did, that they were not like to them. But the plague was in the land, and men used their senses in deciphering its characters, and the mist began to clear, and reason and truth were more distinctly seen. But ah! it was a sorry sight to look upon the ultra-contagionists, and a sore change it was that came upon their fortunes. They shunned the societies where victory had been their's, and the press, to which they had heretofore flown with such glee, was a sealed thing to them, and they loathed the light of the day because it was too bright, and they wrapped themselves in the dignified and deep obscurity of their closets.

The leaders gave the cue, and their followers, like the sheep of Panurgus, caught it. It was criminal and wrong for men to investigate the malady that was scourging nations, it was right and proper to shut their eyes and hold their tongues. This was the new creed, this was the novel and aristocratic method of deciding disputed or clearing dubious points, in a disease confessedly mysterious. It must be owned that the mode was not wholly original, an ancient and homely adage on opening the mouth

and shutting the eyes, having probably furnished a hint to those who shewed themselves apt in taking it. But the bile, which poor wretches with cholera cannot shew, was amply secreted by the ultra-contagionists, nay, it was not only secreted but discharged, and very green it seemed to the bye-standers to be. Again was their virtuous indignation excited by their opponents, again were the latter derided and insulted, again was their foolish zeal contrasted with the eminent placidity and quietism of men who took fees or could not get them regardless of cholera, again were the vials of wrath of man and Deity vented openly on their heads, again was it lamented that a mob could not be raised to wreak on them perchance what a mob once wreaked on Priestley. Some foreign reader may think this exaggeration and caricature. Alas! it is not. We blush for our profession, when we are necessitated to confess that every tittle of what we have merely hinted, is graven in characters too black to be effaced. But we leave this painful subject for the present.

To return then to the march of cholera. Wonderful to relate, those who traced it, inch by inch, from JESSORE to HAMBURGH, with as much precision as a courier's route could be traced by the changes of horses and the "traveller's book" at the hotels, have all at once lost their clue, and found themselves unable to track the monster, even in a single instance, between the THAMES and the CLYDE! We, indeed, find no difficulty in the solution of this problem, from a firm conviction that nine-tenths of the facts and records by which our literary practitioners tracked the cholera, are not merely unintentional errors, but, in a great proportion, wilful and deliberate falsehoods, based on political creeds or hypothetical prejudices! The present number of our Journal will, we fear, contain some strong proof that, even in our own country, where a line of policy is to be supported, or a doctrine to be maintained, truth is voted a bore, and no facts or arguments listened to, except when on one side of a question.

In this land of freedom, however,

there is yet some independence of spirit—some immunity from the thralldom of authority—and some medical practitioners capable of observing for themselves, and resisting the dictates of medical coteries, when in opposition to the evidence of their senses. With joy, therefore, do we abandon the mephitism of literary compilers, and turn to the results of experience in our own island. Instead of the horrible and unspeakable names, Russian and German, whom we have been consulting for a year or two past, respecting cholera, together with the dressed-up and poetical (query political) portraits presented to us, we have now the plain unvarnished tales of English practitioners who have witnessed the epidemic on our own shores—and we have the evidence of our own senses, as tests for both foreign and domestic statements. Truth will now come out—and delusion has just cause to fear. But of this more anon.

Mr. Greenhow's book is one of the most interesting that we have perused since that of Mr. Bell. It is distinguished for modesty, (almost always an attendant on talent,) clear conception, and accuracy of judgment. We regret exceedingly, that the late period at which we received the publication and the multiplicity of subjects on which we were engaged at the time, will prevent us from doing justice to the work. We trust, however, that no practitioner who has any zeal for his profession, or interest for his own success, will fail to possess himself of such a cheap and valuable book. It is worth all the *literary effusions* of the medical press put together on the subject of cholera.

Mr. G. demurs (and well he may) to the name of the disease. If it had any thing to do with bile at all, it ought to be called *acholia* instead of cholera. He thinks that “malignant cholera” is the least objectionable term. We think the term “acholeric fever” would be better. Mr. G. confirms the observations of others that the asphyxial stage is generally preceded by gastro-enteric irritation—usually in the form of diarrhoea—and that a fever succeeds in proportion to the intensity of the

asphyxial paroxysm. It is in the second stage only that the disease can be recognized from common diarrhoea and fever. The following is an analysis of the symptoms.

“ 1. Great irritation of the minute nervous expansion of the stomach and bowels, whereby they are impelled to a frequent discharge of their contents.

2. A peculiar condition of the mucous membrane of these organs, whereby their proper absorbent and secretory functions are entirely suspended, and they permit the profuse serous discharges to drain through them without resistance.

3. When the serous or watery discharges from the stomach and bowels have become once fairly established, a complete suspension of the biliary and urinary secretions takes place.

4. A failure of the action of the heart and arteries, often so complete as to amount to a total stagnation of the circulating mass, not only in the capillary but in the larger vessels; while the blood is changed in quality by the failure of the process of oxygenation and the removal of its thinner parts, and diminished in quantity by the profuse serous or watery discharges from the stomach and bowels.

5. Consequent and dependent on the arrested circulation, a complete failure of animal heat, as evinced by the cold extremities, and the extraordinary coldness of the tongue and breath.

6. Spasmodic actions, more or less severe, of the muscular apparatus—probably dependant on sympathy with the irritable condition of the alimentary canal.”

Mr. Greenhow enters on an ingenious physiological examination of the phenomena of the disease. We will not affirm that such is useless, but although we cannot altogether agree with our zealous author, we cannot afford space for either his opinions or our own comments. The following extract is more immediately practical. It comprises a good abstract of the cadaveric changes from cholera.

“ No alterations either in the organization of the neuralgic, or visceral structures, has been discovered to ac-

count in a satisfactory manner for the remarkable train of symptoms which characterizes this extraordinary disease, and any morbid appearances which have presented themselves must be considered rather as arising from, than as having occasioned, the functional derangements which were observed during life. The truth of this remark, I think, will be corroborated by the writings of every author on the subject, and certainly my own observations have tended entirely to confirm it. In point of fact, with the exception of a distended gall-bladder, and an empty shrunk condition of the urinary bladder, which have very constantly been observed, no morbid appearance whatever has been discovered, but what might fairly be anticipated as necessarily arising from the arrest of the circulation during life, and altered condition of the blood already noticed. The blood is found dark and viscid, and collected in the great vessels, congested in the liver and lungs, and probably injecting the vessels of the mesentery and intestines, of their mucous membrane more especially, but occasionally of their serous membrane also. The vessels of the brain and spinal cord have sometimes been found in the same injected condition. We can easily understand how such a vascular condition of viscera should, in case of re-action being established, *lead to extensive and acute inflammations, as so frequently happens when the patient passes into the third stage of the disease; and if re-action have fully or partially taken place at the time of death, we shall in all probability find ample proofs of the existence of such inflammation.*"

The following are the indications laid down by our author in the treatment of the malady.

" 1. The necessity of allaying irritation in the nervous expansion of the stomach and bowels.

2. To excite the vascular system, and to restore animal heat.

3. To restore the suppressed secretions.

4. To obtain healthy evacuations from the bowels and kidneys.

5. To moderate re-action, and obvi-

ate congestions, local determinations, or organic inflammation.

The first indication may be considered as common to the first and second stages of the disease, the three succeeding ones relate principally to the second stage, and the last indication is peculiar to the third stage of cholera. We will consider them in the order of their arrangement."

In our notice of these works on cholera we have rather departed from our ordinary practice of analysis in preference to quotation, because it is a disease which is not more characterised by the peculiar symptoms well known and often described, than by the epidemic tendency to falsehood with which it seems to infect many of those who write upon it. If we did not give the very words of an author, ten to one that we should be accused by the ultra party of misrepresentation. In the first stage Mr. G. recommends emetics and bleeding, under the following circumstances.

" If the stage of collapse have not yet established itself, and if with bilious diarrhoea the patient complains much of nausea and occasional retching, the matter rejected consisting principally of undigested food, we shall probably find a dose of ipecacuanha, with or without antimony, answer the purpose, or even copious draughts of warm water will suffice to wash out thoroughly the contents of the stomach. Should the patient complain at this time of vertigo, head-ache, or pain in the abdomen, with an accelerated pulse, the greatest relief will arise from a full bleeding, proportioned, however, to the strength of the constitution, the effect produced upon the pulse, and the urgency of the symptoms. As the blood flows the pain in the abdomen and head will be relieved, and the pulse will become slower and softer; a manifest diminution of gastric irritation will also result from it."

When the stage of collapse has set in we require stimulants—the mustard emetic—after this doses of calomel and opium, the latter not in too large quantities, grain doses being generally suf-

ficient — internal stimulants, brandy perhaps the best—copious warm stimulating injections into the intestines—external heat and friction. Mr. Greenhow makes the following remarks on the application of the latter.

" For the accomplishment of this purpose, one of the first things to be attended to, is to clothe the person of the patient in a large body-dress or shirt of thick flannel, and to envelop him, when laid in bed, in an ample supply of warm blankets; heated bodies of any convenient description should also be constantly applied to the extremities, to the spine, and to the pit of the stomach and abdomen. Various contrivances have been made use of for applying heat to the surface. To the employment of the warm or hot bath it has been objected, that the exertion and fatigue attendant on its use, are likely to be more injurious by the exhaustion they would occasion, than could be compensated by any benefit arising from the general application of heat that would be obtained; and although warm baths have been found beneficial in India and on the Continent, in this place, they have not been resorted to in the treatment of Cholera. Nevertheless, I know a gentleman who suffered from Cholera at Archangel, during the last Summer, and who was restored from a state of complete asphyxia by being kept in a warm bath, of high temperature, for an hour and a half. I am sufficiently sensible of the necessity of preventing the patient from using any voluntary exertion, and more especially of strictly preserving the horizontal position during arrested circulation, having witnessed the fatal effects of a departure from this rule in the almost immediate death of the patient; but I am yet inclined to believe, that the prejudice against the use of the warm bath is greater than necessary. The patient might surely be placed in, and removed from it, with such quickness and so little disturbance, as to obviate the objections that have been made to it. It is, however, for the most part in hospital practice only, that the employment of this means of restoring the defective heat of the system could be available

since the houses of the poor are seldom provided with the requisite conveniences for preparing a heated bath. Various machines have been invented for introducing heated air into the bed of the patient, but the experience of our hospitals has proved their inefficiency, I believe, without an exception, and their use has been almost entirely laid aside. Mr. Wood, a gentleman of considerable ingenuity in this place, has contrived an apparatus consisting of several thin bottles of tinned iron, which are adapted to the extremities and other parts of the body in such a manner, that when filled with warm water, and cased in bags of flannel, they have been found to answer in a satisfactory manner the purpose of the external application of heat; but on ordinary occasions, we must content ourselves with heated irons, bricks, bags of sand, flannels, &c."

On large warm injections, and the tobacco-enema, we have spoken in our notice of Dr. Lawrie's pamphlet. Mr. Greenhow appears to take much the same view of the tobacco injection as we have done. Friction is the best application to parts affected with spasms, for which, also, a ligature round the limb is often serviceable. If these means have been productive of benefit, the secretions are probably in some degree restored. Mr. G. now recommends calomel and purgatives.

" Unless a considerable quantity (of the calomel) have been already taken, a full dose, varying from five grains to a scruple (in truth I believe it is a matter of much indifference which) may be given; and to fulfil the fourth indication—to obtain healthy evacuations from the bowels and kidneys—the exhibition of a purgative may soon succeed. Castor oil, I am disposed to believe, will be found the most effective and least irritating medicine of this class, but should it fail, other means ought soon to be resorted to, and injections may be employed to assist their operation. Calomel and jalap, or a purgative infusion with carb. and sulph. of magnesia, may be given at intervals until discharges are obtained from the bowels; these will probably be found feculent and bi-

lious, and, for the present, we may consider our patient safe, especially, if, as usually happens, urine be discharged at the same time."

It is in this as in most other violent diseases, what we do not ourselves superintend is inefficiently performed by nurses. If the medical man has any care for his patient in the stage of collapse, he will hardly quit him till he is either recovered from, or past all earthly hope. When the stage of fever has set in, the farther use of stimulants is most pernicious, "the analogy between this and the various forms of continued or inflammatory fever may be considered as complete," and the treatment must be of a corresponding description. Its leading feature is usually organic inflammation, and the treatment must be conducted on general principles. It is at the commencement of this stage that Mr. G. warmly recommends bleeding, "a powerful remedy—powerful when employed at the auspicious moment—powerless when used at a later or an earlier period."

"When we are fortunate enough to be called to a patient before the pulse fails, still more before the serous evacuations commence, when he is suffering from the symptoms which so frequently occur in the first stage—nausea or vomiting, purging of bilious matter, vertigo, head-ache, probably injected conjunctivæ, pain in the abdomen or at the pit of the stomach, with a quick, sharp, or oppressed pulse, and probably occasional cramps in the legs—a full bleeding will be found of the greatest benefit, not only in relieving the existing symptoms, but in averting the impending horrors of the second stage of the disease; this effect may perhaps yet be produced, although the pulse have become feeble and still more oppressed, but not when imperceptible. In such cases it expands and increases in strength and freedom as the blood flows. If, however, asphyxia, coldness and blueness of the extremities have fairly established themselves, the attempt to obtain blood is vain; thickened and stagnant as it is in the vessels, it cannot be made to flow, and if a few ounces be squeezed from the orifices, it

hangs from them in long strings, accumulating like stalactites, without producing any beneficial effects. On the contrary, it fatigues the patient, exposes him to the prejudicial influence of cold, and suspends for a time more efficient means of relief. I must, therefore hold bleeding in these circumstances to be inadmissible, principally because it cannot be accomplished; and the attempt injurious, since it diverts attention from measures of less doubtful utility, because they are really practicable."

From what we have seen of the disease now in London, from the results of examination after death, from what we have read of the practice in the North, from the conclusions derived from reasoning on general principles, and from our experience in India, we do most conscientiously believe, that the remedy which we first proposed and employed for the cholera of Indostan, we mean bloodletting, is after all one of the safest and best, when judiciously timed and applied. Thirty-three cases of the disease are related by Mr. Greenhow; but these we must pass over. We may give the results of his observations on the subject of prognosis, that is, on the chances possessed by different individuals when attacked by the disease.

"The chances of recovery in cases of Cholera must depend upon the stage of the disease; the duration of the attack before the employment of judicious remedies; its severity; and upon the age, constitution, and previous state of health of the patient.

It has been seen that when the patient comes under treatment in the early stage of the disease, before the pulse and animal heat fail, his recovery may be calculated upon with much certainty. The abstraction of blood if indicated, a single dose of Calomel and Opium, succeeded by Castor Oil, will frequently restore him to health in a few hours.

When the more formidable symptoms of the second stage have set in with great severity, the chances of recovery are, in all cases, very precarious; and if the constitution be enfeebled by

previous disease, or old age, the case may be considered as nearly hopeless. In childhood, youth, and the vigour of life, an active and diligent use of remedies will often be attended with complete success; and it is in these cases that we are stimulated in our exertions by the satisfaction of witnessing their utility. The warmth of the body is, in the first place, restored; the pulse becomes perceptible, it increases in strength and volume, and the natural colour of the skin gradually returns; the secretions become re-established, and the patient is brought into a state of safety; for, with vigilance, the succeeding symptoms may, with much certainty, be obviated. All this, however, does not go on uninterruptedly. The patient has many uneasy sensations during his recovery from the stage of asphyxia; he becomes restless, complains of pain at the stomach, with occasional nausea, or even vomiting. Still there is restored action of the heart and arteries, the functions of life are going forward, and we may fairly anticipate that, under judicious direction, they will lead to the entire restoration of the patient. But when the restorative efforts are opposed by previous organic disease, general feebleness of constitution, or the worn-out energies of age, we must not calculate too confidently upon any imperfect re-action that may be induced. Heat and pulse may return, the former perfectly, the latter in degree only; the spasms and watery discharges may cease; something approaching to natural excretions may even take place, and yet the patient will not unfrequently sink; not from violent reaction, or the development of local inflammation, but from want of energy in the vital powers to carry forward the attempts at restoration which seem so happily commenced.

The danger of the case is by no means dependant upon the quantity of matter discharged from the stomach and bowels. In some of the worst cases, this is not very considerable, and in some of the most successful, it has been very great. Neither is cramp or spasm a certain criterion. Many fatal cases have occurred, wherein it was nearly

entirely absent, or soon ceased. The great danger appears to arise from imperfect or suspended circulation. Let this be restored fully, and the rest is within our control. On this circumstance mainly, then, will rest our judgment as to the probable result of our efforts, though all the concomitant circumstances of the case must be taken into the account."

We have arrived at a question of vital importance to the community—the cause or causes of cholera. There must be two sets of causes, the predisposing and the exciting. But a limited number of any community are attacked, though that number will vary, in the gross or in the detail, with the varying circumstances of the mass, or of a portion of the population; in other words, with the general or partial action of the predisposing causes. The predisposing causes may be natural or acquired, or, as Dr. Lawrie words it, there may be susceptibility and acquired predisposition. In our notice of that gentleman's work, we stated our belief that both were in operation, and Mr. Greenhow is of our opinion. On susceptibility, then, we need say no more, than that it is a property of the human being beyond our ken—something implanted in and mixed up with its organic construction, which does not admit of mechanical or chemical analysis, which can only be known from its effects, and cannot be predicted from any certain data, before those effects are manifest. But *acquired* predisposition is more easily recognized. It is to be found in whatever debilitates generally, and affects the organs involved in cholera particularly. The needy, filthy, ragged, starving, crowded population of the worst parts of Newcastle, and Gateshead, and Glasgow: the inhabitants of the lanes of Rotherhithe, St. Giles's, Chelsea, St. Mary-la-bonne: these it is who have hitherto suffered in this country, these it is who display, in a language too plain to be mistaken, what acquired predisposition consists in. One of the first cases of cholera that we saw in the cholera hospital was a miserable prostitute, an inhabitant of the purlieus of Kent-street, who, according to the statement

of herself and of those who knew her, had been famishing with her paramour for a fortnight. The little that a precarious trade brought in, had probably passed to the till of a gin shop. The very first case that occurred in Chelsea, which case we saw with Mr. Gaskill, was in Augusta Court, a miserable alley by the side of the river. It was a girl who was one of five that inhabited one room ; the father was nearly blind, the mother bed-ridden, the whole had had nothing to subsist on for a very long period but two shillings per week from the parish, with what little assistance they could procure from relations nearly as destitute as themselves. They scarcely knew the taste of animal food, but had long subsisted on potatoes and what they called coffee. The child attacked had just recovered from small-pox, following scarlet fever. She had gone before her house to play at shuttlecock, in one of those biting days with the wind at North-East, of which we have had so long and curious a continuance in the metropolis ; she returned home, complaining of cold and pain in the epigastrium, and at 2, a.m., next morning was attacked with cholera. She not only had not, but could not have had any communication with the parts of the town where the epidemic had just broken out, nor on the strictest inquiry could we find that even any of her family or relations had left the neighbourhood. But this by the way. The place where these poor wretches lived, or rather starved, is a palace compared with many that we have visited in search of the pestilence.

"Of the powerful influence of fear, in particular in predisposing to an attack of Cholera, some remarkable instances have taken place, particularly in the nurse who died at the Sunderland Infirmary, and the Rev. Mr. Scott, of that town. That the same affection of the mind, combined with grief for the loss of a husband, wife, or child, and probably assisted by other predisposing causes, more especially poverty and its concomitants, has induced the attack in successive members of the same family, admits, I think, of every thing

short of absolute proof ; for the succession of cases has, for the most part, been more rapid than could be accounted for on any principle of contagion, if, indeed, such an agent exists. The testimony of Mr. Fife, of Gateshead, a gentleman of much intelligence, whose experience of the disease since its appearance in that town, has been very extensive, entirely confirms this opinion. 'Cholera,' says he, 'is certainly not communicable, for though it frequently attacks several persons in one family, it is either simultaneously, or in such quick succession, as to preclude the idea of their having received it from each other ;' and Mr. Brady, of the same place, observes, that 'no principle of contagion could account for such a sudden spread of the disease.' We can only conclude then, that powerful predisposing causes, common to all, were in active operation at the time the efficient cause was called into action.

It has been generally remarked that wherever cholera has hitherto prevailed, it has principally attacked the broken-down in constitution, the dissolute, the abject poor, those devoid of proper bodily comforts, whether in lodging, clothing, or diet, those enfeebled by age, and the inhabitants of low, dirty, crowded, and ill-ventilated situations ; and, with few exceptions, such has been the case in Newcastle. These, then, must be considered as the general predisposing causes of an acquired physical nature ; we may add to them exposure to great fatigue, damp, cold, or dietetic excess. A diligent enquiry would, I am satisfied, enable us to discover instances of all these circumstances having led, more or less, directly to the attack ; but of the effect of the latter cause in particular—dietetic excess—the extraordinary irruption of the disease at Gateshead, in the midst of the Christmas feastings, offers a most remarkable example. It is true that Mr. Fife, of that place, has been led to doubt the effect of habits of intoxication in producing predisposition to cholera, as will be seen in his excellent communication on the subject, wherein he observes that 'from the great proportion of orderly, sober per-

sons and children of all ages, among the patients, I cannot consider drunkenness a powerful predisposing cause, though, for the sake of morality, it is well to favour the opinion.' But, after all, this only proves that such habits are not the only predisposing causes. Innumerable instances might be brought forward wherein the attack supervened either during the continuance of, or immediately subsequent to, excessive indulgence in ardent spirits. Such was the case in two of the earliest instances that occurred in Newcastle, those of Eddy and Mills, and others have come under my own observation. Nor will it admit of a question that their habitual use greatly diminishes the healthy tone of the stomach and bowels, and induces an irritable condition of their mucous lining."

Fear then is a cause, and poverty is a cause, and common sense would whisper, nay, she would thunder in men's ears, if they were not closed against all such artillery, that the removal of those causes would be necessary and proper. Clothe the poor, if you can, and feed them, and give them ventilation, and above all cease to terrify them. No, no, we are mistaken! Fright them to the very top of the bent—din in their ears contagion, contagion, contagion—shun them as you would perdition—drive the rich to their palaces, treble barred, and to their country seats surrounded with cordons of fat menials, armed constables and gamekeepers—cry shame and denounce execration on all who would inspire confidence, calm terror, and make the bad seem better rather than worse—do all this and then deplore the evil, and weep over the misery, and appeal to heaven to avert its judgment. Do all this and call yourself a philosopher and a philanthropist, and damn in this world and the next those who are not like you.

The efficient, that is exciting cause of cholera, or rather the question of its nature, next presents itself. We cannot avoid concluding that there is no one exclusive cause, which makes the disease break out in the predisposed. What that epidemic influence may be which makes cholera prevail,

we do not profess to know, nor do we know the causes of any epidemic. They have baffled all inquiries hitherto, and the epidemic cholera is not likely to prove an exception to the general law deduced from the mystic character of its predecessors. But the mind of man is ever ready to catch at aught that will sever a difficulty baffling its solution; hence the vague theories of the ancients, hence the bold generalization of the moderns. When the causes of cholera baffled investigation, the doctrine of contagion was raised, and as it always proves acceptable to governments it was taken up and supported by them, because it afforded excuse for raising armies, and strengthening the executive, and forming boards and bestowing places. It was also a favourite with book-worms, because the evidence supporting it has more of an exact and mathematic character, than the record of circumstances not obviously connected or apparently contradictory. Thus, A. has left a place where cholera was, and comes to B. where cholera is not. Neither A. nor B. perhaps catch it, but B.'s cousin, or some one in the street, or in the town, or in the province is affected, and so contagion is proved, and the question is settled. Some persons to be sure were sceptical of many of the most unanswerable facts, and could explain others without resorting to the doctrines of importation and contagion. But this signified nothing; the cholera was to come and did come by contagion, and all that the practitioners of England had to do, was to watch its progress. Fortunately they have done more: they have looked and thought for themselves.

"The assumed capability of cholera being conveyed by shipping from one country to another, on which our system of quarantine is founded, very naturally gave rise to the suspicion, when it first appeared in the port of Sunderland, of its having been imported from some place on the Continent, where it was known to prevail; and several stories were in circulation descriptive of the manner in which it had thus been introduced. I shall not here repeat any of these tales, suffice it to say that none

of them have been in any degree authenticated. That the ships which were blamed for having committed the mischief, were found to have been from uninfected ports, their bills of health clean, and their crews healthy; in point of fact they were fairly acquitted of the charge; and I believe the conviction is now almost universally entertained by the inhabitants of Sunderland, medical and non-medical, that the disease did not reach that place from any foreign source whatever.—It may be further stated that the first case of cholera which took place in this part of the country, was at a considerable distance from Sunderland, having been at a small village called Team, about two miles south-west of Newcastle. This case occurred to Dr. Alexander, of Newcastle, on the 4th of August, 1831. The details are given in the Appendix, No. 1.; other cases occurred at Newcastle simultaneously, if not before the regular appearance of the disease at Sunderland; although want of experience of its true characteristics, and unwillingness to believe in the fact, induced medical gentlemen to endeavour to prove that these were not cases of the new disease; yet subsequent observation has sufficiently proved their identity, and, I believe, it is now generally admitted. Such were the cases of Oswald Reay, which occurred in October, of William Armstrong in the beginning, and of Robert Jordan towards the end of November. On the 7th December the next case occurred, that of Maria Mills, with which commenced the official reports of the Board of Health of this place. The strictest enquiries respecting the origin of these cases have failed to obtain the slightest evidence of their having arisen from any infected source, and seem to prove, in the most satisfactory manner, that, however the disease may have since extended itself, its commencement in the country was spontaneous, upon whatever causes it may have depended."

If, as most believe, the disease sprung up in Asia, and has spread to us, taking fourteen years to march from the Ganges to the Thames, there must be some general cause at work, laughing to ut-

ter scorn all boards and quarantines. Had it depended on contagion chiefly, if not solely, as plague may be supposed to do, then the quarantine code might have done for cholera what it has for plague, might have kept the disease from many a city and country which it has desolated. But with cholera it has been otherwise, and the most violent contagionist deplores the inefficiency of his cordons and guarda-costas. What the cause may be we have said that we do not pretend to determine; ignorance is better than false knowledge. It seems that atmospheric irregularities are frequently remarked during its prevalence and progress. The Winter in this town, has been a strange one, the last month's weather remarkable. It appears that in the Autumn preceding the eruption of the cholera at Sunderland, an unusual quantity of sheep had suffered from the rot. The meteorological journal of Mr. Losh demonstrates the unseasonableness and variations of the temperature, &c. Mr. L. observes—

"I have not had much opportunity to observe the birds and insects. But fewer birds of passage have shown themselves, and the wild fruits have remained longer upon the trees than is usual. Flies of all kinds, particularly the common horse fly, have been very frequent; and, in digging and planting, I think I have met with more (and in a more perfect state) torpid insects, such as moths, bumble-bees, &c. than I ever observed before."

Mr. Greenhow concludes that the seasons have been peculiar, and their influence over animal and vegetable life peculiar also. To be sure this will not explain all, but the observation of facts can never be productive of mischief, provided an undue weight is not attached to them. We fear we know little or nothing of the nature of that epidemic influence, which has brought cholera to our shores, or raised it in the land.

"That the atmospheric condition, be it what it may, on which depends the efficient cause of Cholera, has been gradually forming itself in the course of the Summer, is rendered yet more pro-

bable, when we review the character of the diseases which have principally prevailed, in the neighbourhood, during that period. They have consisted, in great part, of diarrhoea, common Cholera, dysentery, and a form of continued fever, often commencing with these several forms of gastric and intestinal disease. It has been a general remark, amongst medical men, that the ordinary complaints of the season all tended to resolve themselves into the prevalent febrile affection. Throughout the epidemic, a marked determination has been observed to the mucous membrane of the intestines, showing the irritable condition of that tissue, and in many cases discharges of blood, sometimes to an extraordinary extent, have taken place. It is worthy of remark that this form of fever has been most prevalent among, if not entirely confined to, the more elevated parts of the town, and to the families of a different class of the community, from those in whom Cholera has taken place; that while the dwellings of the superior grades were visited, very generally, with continued fever, the lower and poorer districts enjoyed an unusual degree of good health; and that since Cholera became prevalent, the former type of disease has nearly disappeared, except when it occurs as the sequel, or third stage, of its more formidable successor. These are circumstances well worthy of consideration, and naturally suggest many interesting reflections. Supposing, as seems probable, that considerable analogy exists between the efficient causes of the two forms of disease, we are led to inquire whether the difference is in kind, or in degree only? and why, if they differ in degree only, should the less intense degree affect the better and more comfortable classes, leaving the poorer untouched; and *vice versa?*

Whatever may have been the cause of this singular distinction, it has not depended upon a mere accident; the line has been far too distinctly drawn to admit of such a supposition, and it must evidently have arisen out of some well-defined principle, though it has hitherto eluded our powers of discrimi-

nation. I cannot hope to elucidate the mystery, but would again revert to the fact that, throughout the season, the mucous membrane of the alimentary tube has been especially susceptible of disordered function. The several forms of diarrhoea, dysentery, and common Cholera occurred in greater frequency and severity than in ordinary seasons, and every now and then a case occurred, marked with such unwonted characters, as to lead to a suspicion, at least, of its being the true 'Cholera,' to which the attention of Europe has been of late years so earnestly directed; nor has this been the case in this district only; it is well known that in various parts of England and Scotland similar cases have occurred, which have generally ended in death. Surely there is some general cause for all this. It is impossible not to connect it in the mind, however vaguely, with the morbid cloud which has settled upon our shores; a cloud which, however baneful its effects when resting upon a particular locality, seems to satisfy itself with a determinate number of victims, and then to pass forward a stage in its uninterrupted career. Sunderland has already, after a visitation of a few weeks, emerged from its influence; and, at Newcastle, its work is probably nearly completed; but, in its onward journey, all must expect to add their portion to the accumulating number of its victims."

We need not tell our London brethren that such has also been the case, in a great measure, with us. Bowel-complaints and cholera, to a remarkable and very unusual amount, has been observed during the entire year. We never saw so much of it among the higher classes, nor have we hitherto seen it so severe. It is well known that many have died, and that with alarming rapidity, from the complaint. The cholera constitution seemed forming itself here, as in the North, and the bowel-complaints and cholera of the Summer, Autumn, and Winter of last year may be said, with us, to bear the same relation to the epidemic of this Spring, as the premonitory diarrhoea does to an actual seizure of an individual patient with the malady. Our author examines

the postulates of the contagionists in the following order of their affirmation.

1. "That Cholera was introduced into the port of Sunderland by means of ships from some infected place in the north of Europe.

2. That its course could afterwards be frequently traced from one individual to another.

3. That persons employed in the necessary offices about the dead, in placing them in their coffins, and in attending their funerals, have frequently been immediately afterwards affected with the disease.

4. That the disease frequently attacks several members of the same family.

5. That it has frequently been introduced into other places by persons from infected situations.

The answers to some of these assertions have been partially anticipated by what has been already stated. But to shew the uncertain data upon which the supposed introduction of the disease by importation is founded, I shall introduce an extract from a letter from a medical gentleman at Sunderland, who is an advocate for contagion, together with its refutation from his own pen. 'First, then,' says Mr. Green, 'with regard to the origin of Cholera in England (say Sunderland, for it certainly made its first appearance in this place), I shall explain to you two or three facts on this head, and then you may draw your own conclusions. In the month of August last (I believe on the 14th day), a ship from a suspected port, and which had undergone quarantine, passed the Sunderland Roads; two strong and healthy pilots went on board thereof, expecting she was coming into our port, which, however, she did not. The men, in a very short time, descended into their coble to return to the shore. One of them, whose name was Henry (and whose case you may probably have heard something of before this time), was taken ill of Cholera in the boat, before he had time to return to the shore, with every symptom of the disease which has lately been denominated the Asiatic or Spasmodic Cholera, and died in a few hours. The other man also was very soon taken

ill in a similar manner, and had a very narrow escape with his life. These, I believe, were the first cases which occurred in this neighbourhood of the disease which has of late produced such consternation throughout the Empire.' What follows is, nevertheless, worthy of especial notice. 'It is, however, only fair to state, that a fatal case of Cholera occurred about a mile from this town a few days previous to the cases above mentioned, attended by a medical man of some information, who informs me that his case bore great analogy to, if it was not identical with, the late epidemic which prevailed here, and is at present prevailing in Newcastle. And one or two other cases, of a very suspicious nature, fell under my own immediate notice, which, however, did not prove fatal, and which, I concluded, were rather aggravated examples of the ordinary Cholera of this country. Subsequent to the date of the two pilots taking ill, a few scattered cases occurred, with an interval of a week or ten days betwixt each, till four cases happened in one day, and then it broke out in full force. I have been informed that there was no case of sickness on board the vessel alluded to above when the pilots went on board, and therefore they could not receive any infection. This argument, I am of opinion, will not hold good. Granted, there was no case of Cholera on board of the ship at the time, if I may be allowed to judge from facts which have fallen under my immediate observation, I am led to believe that the presence of Cholera on board the vessel at the time, was not essentially necessary for the communication of the disease to healthy persons.' I readily acknowledge my obligation to Mr. Green for his communication, and would pay the utmost respect to his opinions, but it cannot be denied, I think, that he is sufficiently credulous as regards the all-pervading power of contagion. At his own request, however, I must exonerate him from the responsibility of the above facts. A few days after the former, I was favored with a second letter, of which the following is a passage. It will shew, clearly enough, how much credit is due

to the tale of the pilots :—‘ Since my last communication to you, a further investigation has taken place relative to the case of one of the pilots (Henry), and I find the widow and friends of the deceased tell two stories about it, totally at variance with each other, one of which corresponds with what I stated to you in my former letter, the other is that he got the infection a fortnight before, on board a vessel some distance from this place.’ From such evidence as this it is clear that no conclusion can be drawn in favour of the importation of the disease into Sunderland.”

Such is the rotten evidence for importation. But supposing one of the stories true, and like the Kilkenny cats they eat each other, how account for “the fatal case of cholera which occurred, about a mile from Sunderland, a few days previous to the cases of the pilots?” In the neighbourhood of Newcastle, too, a similar case had already taken place. And then the ship came from a *suspected port*. Pray what port was that? Our readers may start when we tell them, that all the ports of Holland were *suspected ports*—of that Holland and those Dutchmen, who now bar us out with forty days’ quarantine! The next is a long quotation, but it is a good one.

“ The second argument in favour of contagion—that its course could be frequently traced from one individual to another, has also been partly anticipated. It is impossible to examine into all the alleged facts of this description. In many cases I am satisfied, from ample experience, that the persons from whom information is sought will not unfrequently make their information agree with what they suppose to be the wishes of the enquirer—and very naturally so, without imputing to them intentional deceit, when they have no very certain information to communicate. To prove satisfactorily that the disease has actually been communicated from one person to another, it appears necessary to show two things: 1. That communication with the sick has really taken place; and 2. That no other causes were in operation adequate to the production of the disease without

the supposition of contagion. Now, that some persons who have had communication with the sick have become ill cannot be denied—to prove the contrary were it practicable, would be too much, it would be to prove that there is *increased safety* instead of *danger* in such communication. But the true question is, does such communication *always* or *more frequently* induce disease, or does the disease *never* take place without it? To tell us that two nurses died of Cholera, in the hospital at Sunderland, is nothing. How many escaped? and might not the same women have died from the same cause, if they had never been in the hospitals at all? Were they free from predisposing causes, especially *fear* or *inebriety*, or from the general exciting cause, the epidemic state of the atmosphere? for even the advocates of contagion generally believe that the disease is *epidemic* as well as contagious. But what has occurred at the four hospitals in Newcastle and Gateshead? They have been well supplied with nurses; they have each had a resident medical man, whose whole time has been spent in the chambers of the patients, directing and assisting in all that was done for their relief; and they have been visited by myriads of medical gentlemen, both residents, and visitors from a distance, none of whom have shrunk from the closest and most frequent contact with the sick; but in no instance has the natural consequence of contagion ensued; neither medical person nor nurse, nor any individual employed about any of these hospitals has become ill. If contact with the sick will produce illness out of the hospitals, why has it not the same effect within their walls also? If contagion pervades the bedding and dresses of Cholera patients out of doors, what charm is there about an hospital to prevent the same from being the case in its wards also? But in no case have those employed in removing and washing such articles become ill in consequence. These are the accredited experimental tests by which the contagious nature of Cholera has been put to the proof, and what is the result? Why with *one*, or at most *two*

exceptions, they have all told against it. But in cases of alleged contagion it is necessary to prove that no other causes were in operation adequate to the production of the disease, without the superposition of contagion. In no instance have I been able to discover that such was the case; however sure it was asserted to be, that the patient had been near to, or in frequent communication with one previously ill, it was equally certain, that they were exposed to the generally prevailing epidemic cause, and that one or more of the predisposing causes were also in existence. This sort of negative evidence may possibly be thought conclusive; it is, perhaps, as much as the opponents of contagion could be expected to adduce against it; but by a rare accident I am enabled to do more. I am enabled to bring forward an insulated case, occurring in a solitary village, which has neither been preceded nor succeeded by other cases, which amounts to the most positive proof. The case to which I refer is that of Margaret Walker. She had been exposed to no source of contagion; but probably an original organic predisposition, and previous delicacy of health, assisted by the depressing influence of grief occasioned by the intelligence of the sudden death of her sister, were the powerful predisposing causes which enabled the efficient cause diffused in the atmosphere (though in too mild a form to affect others in the same locality) to produce its specific effect, and the result was an attack of cholera of the most malignant kind, of which she died in a few hours. Her husband and nine children resided with her in a single apartment; her funeral was well attended; the usual honours of eating and drinking were not omitted, but no one became ill in consequence. Why? because there was not a sufficient concurrence of predisposing and efficient causes to produce disease; but if contagion had been the efficient cause, could this have been the case?—in so malignant an instance it must surely have been in ample force; but the event proved otherwise. There is yet another argument to be deduced from this poor woman's case. Her sister

died at a distance of eight miles from her, and she had no communication with her during her illness; if, however, it had happened otherwise—if she had been taken ill an hour after leaving the *death-bed* of her sister, instead of an hour after *hearing* only of her death, what would the advocates of contagion have inferred from such a fortuitous occurrence? Would they not, and with some appearance of reason, have declared that she manifestly received the disease from her dying or dead sister? It cannot be doubted that such would have been their argument, nor would it have been easy to deny its plausibility. In reference to the question of contagion, then, I must consider Margaret Walker's case of the utmost value, as proving—first, the inconclusiveness of the facts brought forward in support of that doctrine, and—secondly, as affording positive evidence against it."

The third argument for the contagion of cholera is the alleged frequency of persons being attacked, who were engaged in assisting at funerals. For this argument to be worth much, we must know how many such seizures there have been in a town, if they are well authenticated, and so forth. For a man who was at a funeral, or engaged in one, to be himself attacked, is no ways wonderful during an epidemic. Persons have moral depression, particularly great at such a period—are exposed to cold—commit excesses—are crowded in the chamber of the dead—in short, exposed to all the ordinary predisposing and exciting causes of the distemper. We have always been struck with one extraordinary inconsistency in the arguments of the contagionists. Not one of them dares to avow that the contagion is of a virulent character, like that of plague; he knows that if he did he would probably find the dimensions of his ears very sensibly increased. Yet many, if not most of the instances adduced by them, are proofs of a contagion of a most violent description. Thus a person enters a ship from a suspected port, cholera not being in the vessel; he descends into his boat, and dies in a twinkling—another merely meets

a person who has been where the cholera was, and *his* fate is sealed—a third removes a piece of furniture, and is slain—and so on. Yet in practice and in the gross we find none of this frightful contagiousness. Hospitals are erected, and medical men visit them, and nurses live in them, and clothes go in and out, and furniture travels backwards and forwards, and not a case of contagion can be got for love or money. 'Tis strange. Can there be such things as lies?

" The fourth argument in favour of contagion—'That the disease frequently attacks several members of the same family'—refers to a fact of which there is sufficient proof. But the question naturally arises—under what circumstances did this plurality of cases occur? Did the patients become ill at the same time, or at intervals of sufficient length to admit of a reasonable belief that contagion, communicated from one individual, had time to produce its effect on another? With very few exceptions, I have found that the attack has been either actually simultaneous, or with so short an interval, as to forbid the idea of the intervention of contagion. In the cases of a man and his wife, who died at Walker, the man was seized at 3, and the woman at 7 o'clock on the same morning; their child was attacked in the course of the same day, and also died. In cases which I saw with Mr. Knagg's, of Gateshead, although the most severe symptoms occurred in the daughter, subsequent to their having shown themselves in the father, I found that both had been affected with diarrhoea at the same time, from whence we must conclude that the same cause was brought to operate on both at the same period. It would be easy to multiply such instances. The testimony of Mr. T. K. Fife, of Gateshead, already referred to, appears conclusive. He observes, 'Cholera is certainly not communicable, for although it frequently attacks several persons in one family, it is either simultaneously, or in such quick succession, as to preclude the idea of their having received it from each other; at any rate the progress is much more rapid than that of any

other disease propagated by contagion. Among the first 53 cases I attended since the 25th ult., 32 were members of different families; and although few efficient means of prevention were employed, the disease, so far as I know, has not spread in any of them.' "

The last point adverted to is the introduction or importation of the disease. On this we have plenty of slippery evidence abroad, in favour of contagion; at home, where we can use our own eyes, facts go the other way.

" But although many instances are vaguely spoken of, I have not found it possible to verify any in a satisfactory manner. There is some equivocation or doubt in the nature of the evidence, or, at about the same time, other cases occur in the neighbourhood which cannot be traced either to communication with the suspected case or with any other imputed source of contagion.* We have seen how imperfect was the evidence on which the introduction of the disease into the port of Sunderland, by means of ships from abroad, was attempted to be established. At Newcastle not even a suspicion of the kind has arisen. And though at Gateshead the first patient was said to have been lately in that part of Newcastle where the disease prevailed, it yet had no connexion with the fearful number of cases which occurred simultaneously, ten days afterwards, in every part of the town; in nearly fifty different points, cases occurred almost at the same instant. 'On the 25th, about one o'clock,' says Mr. Brady, 'we were assailed by a

* Since this was written three cases have taken place within the walls of the prison, a building constructed upon the most approved principles, and in which the prisoners have been completely insulated, the strictest discipline having been observed, and all communication from without carefully guarded against. For a memorandum of these cases I am indebted to my friend, Mr. Fife, of this town, to whose care the charge of the health of the inmates of the prison is committed.—See Appendix, No. 5.

third and fourth example of the disease, and before the next morning at ten o'clock very considerable numbers had fallen sacrifices to its pestilential ravages.

' Within a space of twelve hours it spread itself over a diameter of two miles, and appeared to pay but very little distinction to altitude of situation, for the higher parts of the town were laid under its stroke in an equal degree, or nearly so, with the lower. Pipe-wellgate, Hillgate, the banks above Pipewellgate, Oakwellgate, the lanes leading from it, Jackson's Chare, Nun's Lane, Wreckinton, Gateshead Low Fell, Low Team, situations as different in their external characters as can well be conceived, were all indiscriminately exposed to its fury, and I do not think the cases were one whit milder in the more elevated than in the lower parts of the town,' and he afterwards adds, ' That it is virulently epidemic, a glaring proof has been afforded to my mind by the way in which we have been here visited by the disorder in question'— ' no principles of contagion could account for such a sudden spread of the disease ;' and, in point of fact, such has been the case in every other place where the disease has shown itself. Attempts are made to trace the first case from some suspected source ; proofs of it are assumed upon the most uncertain evidence, but the further progress of the disease baffles all calculation, and the contagionist is obliged to seek shelter in the admission that it is both *epidemic* and *contagious*.'

Here we must quit the subject of contagion, and pass to that of medical police and prevention. Mr. Greenhow shews the actual and comparative mortality at many places, the erratic course of the disease, its sudden out-breakings when not expected, its general tendency to follow the course of the rivers. We all know the triumphant piece of reasoning founded on this fact. Rivers said the book-men are the great channels of human intercourse ; the disease chiefly travelled on their banks ; therefore it was chiefly propagated by human intercourse ; therefore it was disseminated by contagion. But are rivers the

great channels in this country ? and are there no other causes near the banks of rivers for the prevalence of cholera. It is by those banks that we find the filthiest lanes, the most abject population, the worst air ; it is by rivers we chiefly have malaria, and by rivers we chiefly have cholera. It has gone up the Tyne and down it, but the other "great channels" have hitherto proved no channels for it.

Mr. Greenhow recommends better constructed villages, or at least residences for the poor. It appears that it is intended to destroy the entire village of Newburn, with a view to its re-construction on better principles. Had this been done before, how many lives might have been saved ! Will wisdom be learnt in other places ?

Hospitals should be erected in airy situations, yet as near the centre of infected districts as possible. A litter carried by means of poles on men's shoulders is the best conveyance, the patient being laid horizontal and perfectly passive. When placed in the litter he should be enveloped in an ample supply of warm blankets, and the heat should be increased about his person by the application of Mr. Wood's vessels of warm water.

" In confirmation of the importance of attending to this subject, I may adduce the opinion of Mr. Glenton who has had the principal charge of the patients admitted into the hospital in Sandgate. It is given in a note to Mr. Fife, and refers to the case of the boy removed from the prison, who afterwards died in that hospital. ' If Mr. Fife has any power to prevent future cases from being removed in the car, Mr. Glenton will feel obliged by his doing so. The conveyance is deadly, and the boy himself, on reaching the hospital, said, *it had destroyed him.*' "

If comforts can be procured at home Mr. G. strongly discouragements removal. If the stage of collapse has set in, if the weather is cold, or the hospital distant, the danger from removal is considerable.

" On the whole, it is well worthy the attention of Boards of Health, and Committees appointed to visit the houses

of the poor, to aim rather at supplying the proper comforts and nursing at home, than to remove the sick to hospitals. If they are enabled to accomplish this with any degree of perfection, they will certainly contribute in a much greater degree to the preservation of life, than by the best hospital arrangements that can be devised. It is an undoubted fact, that the relative mortality in hospitals has been greater than in private houses, and I apprehend it distinctly arises from the disturbance, fatigue, and exposure attendant on the removal of patients, and the consequent delay in the use of remedies."

"The cases admitted into our hospi-

tals, perhaps, have not been sufficiently numerous to warrant us in drawing any general conclusions from them, and it is extremely difficult to obtain accurate information from other sources. Nevertheless I am disposed to believe that the chances of recovery at the different periods of life, as shewn in the following tables, may be considered as consistent with general experience. There were admitted into the four hospitals—

19 cases under 10 years of age, of whom 9 died, or 47½ per cent.

79 cases from 10 to 50 years of age, of whom 35 died, or 44½ per cent.

20 cases above 50 years of age, of whom 16 died, or 80 per cent.

SANDGATE HOSPITAL.

		MALES.			FEMALES.		
		Under 10.	Under 50.	Above 50.	Under 10.	Under 50.	Above 50.
Died	23	1	4	4	—	10	4
Recovered	32	4	7	1	3	15	2
Total	55	5	11	5	3	25	6

CASTLE HOSPITAL.

		MALES.			FEMALES.		
		Under 10.	Under 50.	Above 50.	Under 10.	Under 50.	Above 50.
Died.....	8	—	3	1	—	3	1
Recovered	4	—	2	0	—	2	0
Total	12	—	5	1	—	5	1

ST. JOHN'S AND ST. ANDREW'S HOSPITAL.

		MALES.			FEMALES.		
		Under 10.	Under 50.	Above 50.	Under 10.	Under 50.	Above 50.
Died.....	8	—	4	1	—	3	—
Recovered	7	—	4	—	—	3	—
Total	15	—	8	1	—	6	—

GATESHEAD HOSPITAL.

		MALES.			FEMALES.		
		Under 10.	Under 50.	Above 50.	Under 10.	Under 50.	Above 50.
Died.....	21	6	7	1	2	1	4
Recovered	15	2	4	—	1	7	1
Total	36	8	11	1	3	8	5

The relative chances of recovery in patients admitted into hospitals, compared with those treated at home, may be estimated, I believe, pretty accurately, from the following facts :—

Of the entire number admitted into hospital, amounting to 118, 60 died, or 50 $\frac{1}{2}$ per cent.

Of the entire number of cases reported in the towns of Newcastle and Gateshead, up to this day, February 9th, amounting to 1330, 437 died, or 32 $\frac{1}{2}$ per cent.

It is important that the greater mortality in the hospitals should be attributed to the right causes. There can be no doubt that, as regards the proper comforts, nursing, and medical superintendance, the hospitals, for the most part, have the advantage over the private dwellings of the poor. It appears unquestionable, therefore, that to the delay in the use of remedies, and the unavoidable disturbance and fatigue attendant on the removal of patients, must we attribute the less favourable results of hospital treatment. This ought to excite serious consideration. If the averages be correct, of the 118 patients received into the hospitals, instead of 60, 39 only would have been lost, had their cases been attended to at home."

It appears that in the villages the want of medical assistance was severely felt, many patients dying, without even receiving a professional visit. Many interesting facts are communicated in an Appendix to this interesting and really instructive volume. We are sorry that our want of space compels us to refrain from doing more than compliment Mr. Greenhow on the zeal, activity and candour that he has evinced.

X.

PRACTICAL OBSERVATIONS ON THE MALIGNANT CHOLERA, AS THAT DISEASE IS NOW EXHIBITING ITSELF IN SCOTLAND. By D. M. MOIR, Surgeon. Octavo, stitched, pp. 71. Edinburgh, 1832.

THE Edinburgh folks are stark mad on contagion; they out-Herod Herod in their belief of its omnipotence, and fool, liar, idiot, are profusely showered by its press on all who entertain a contrary opinion. They seem determined to be not only twice as religious, but twice as contagious as other people; they will have two fasts, and they will have contagion of double strength. Our readers are aware that Musselburgh has suffered most severely. We find by the report from the Central Board, of the 27th Feb. of the present year, that in this place there had occurred 438 cases, and 193 deaths; whereas, at Hetton, there are reported 476 cases, and only 96 deaths. Now it seems that Mr. Moir, the author of the present pamphlet, is secretary to the Musselburgh Board of Health, to which he dedicates his production. We shall soon see what a stiff contagionist he proves; in fact, he is the hottest champion we have ever been sufficiently unwary to assault. Mr. M. has got the absurd, and now universally laughed-at article in the Quarterly at his fingers' ends. Whether this formed his creed or confirmed it we are not told, and cannot say; neither can we determine whether he was made secretary to the Board of Musselburgh, because he was so stanch on the orthodox side; or, not having yet collected facts enough, whether

that appointment itself contributed to strengthen his contagious doctrines, by supplying cart loads of the peculiar evidence which boards appear to have so keen a nose for. Mr. Moir is the author of an Ancient History of Medicine; we shall soon see what sort of stuff a Modern History might be made of. Lawyers know that, to bolster a bad cause, there is nothing to be compared to a stout swearer; there must be no squeamishness—no stickling. To bolster a bad theory, we equally need a profound credulity on one side, as profound a scepticism on the other. The following extract will shew what we mean.

"Whatever Cholera may have been in India, surely the mind must be strangely constituted which can shut itself against the fact of *its being virulently contagious, at least in this climate*. That it ever shews itself sporadically, I am very much inclined to doubt; for in the instances which have been adduced to support that supposition, *the disease has uniformly stopped with the person attacked*; whereas, in the Malignant Cholera, no sooner does a case shew itself in any particular street or district, than, if entire isolation be not immediately effected, a second and a third follow, and at length the whole neighbourhood is subjected to its influence. Not a single case has occurred, where communication with the infected could not be readily traced out. While, on the contrary, where intercourse has been completely cut off, the progress of the disease has been, to a certainty, arrested. What more is wanted than the corroboration of this fact—or call it, in the present state of our experience, assertion, if you will—that the disease is one communicable by personal contact? Wherever Malignant Cholera appears, ample opportunities will be afforded of substantiating its truth."

To be sure some people may stare at this, after reading the paper of Dr. Ogden, and our notice of the works of Dr. Lawrie and Mr. Greenhow, or, better still, those works themselves; but let them stare! We have long ceased to wonder at any thing, save common sense and common candour.

"Indeed the consideration of the subject reduces itself ultimately to the simple question, 'Does Cholera Asphyxia propagate itself by some contagious quality, or does it not?' If it does, how is a sporadic case to be accounted for?"

Exactly so. How does Mr. M. account for the sporadic cases described at Sunderland and Newcastle? We should like to know.

"If it does not, why are the inhabitants of one village, hour after hour, falling victims to it, while another, perhaps not a mile distant, remains perfectly uninfected? How does it pass from house to house along a street, yet stop at the termination of it, where a family have shut themselves up within their garden walls? Were it an epidemic arising from atmospherical causes alone, no such phenomena would, or could, present themselves."

There's the rub. Does it stop when a family shut themselves within their garden walls? We should be happy to hear of such instances, and, having heard them, we should then like to ask the questions, how does it stop when families don't shut themselves up? how did it stop at the gates of the affluent in Newcastle, Sunderland, Gateshead, &c. and only enter the miserable hovels of the poor? how does it avoid affecting two villages in close communication with one another? how does it stop in families after cutting off one member? how is it confined, as at Hillhead, to a circle of eight houses? how does it stop at doctors' doors and nurses' parlours, sparing even Mr. Moir himself? how does it do all this, and ten times more, in the face of the contagionists? Indeed we cannot tell.

"No stronger corroboration of this position could be any where looked for, than the circumstances connected with the third case which appeared at Musselburgh, and which happened to fall under my charge. This was a girl, whose mother kept a lodging-house, and whom I found in a state of complete collapse on the morning of Thursday, the 19th January—the day after the first appearance of the pestilence. She died on that afternoon, between five

and six, and was buried by moonlight the same evening, in order that the fomes of the contagion might be more effectually counteracted, by having the body removed, and the house properly washed and fumigated. Notwithstanding every precaution, however, the mother, during the night of Saturday, was also similarly seized, and fell a victim on the following noon. Her sister, who had walked from Leith on the same morning, to condole with her in her family distress, was immediately affected on entering the house ; but her symptoms being overlooked in the misery around her, medical assistance was not called in, until, on the return of the nieces from the interment, their aunt was discovered dead on the floor of the dwelling. Her husband, Baxter, a man of intemperate habits, came out to enquire into her fate ; and, immediately on his return home to Leith, was seized with the distemper, and died. By the vigilance of the Board of Health there, the contagion, so far as this individual was concerned, was, by active measures, successfully checked, and Cholera thus, for a while, held in abeyance."

Was there ever such a fanfaronade, in the way of philosophical evidence and induction ? The third case in Musselburgh was our author's first, but we are not told how that patient caught the cholera. Mr. M. has thus committed the extraordinary blunder, of making his man of straw without a foot to stand on. But to proceed. The Musselburgh contagionists immediately begin to fumigate, and bury by moonlight (for contagionists dread the day), and to wash and to scrub. Well, is the disease put out ? The deuce-a-bit. The mother dies in two days afterwards, and we suppose she is buried by moonlight also. The sister is immediately seized on entering the house, and is found dead after the burial, we suppose a very short period indeed. The husband comes out to inquire, goes home, and dies also. But in Leith, where the last person lived, the Board are more fortunate in their fumigations than the Musselburgh folks were, and the disease appears no more. Evidence can be carried no farther. No ! we are mistaken,

it might. Mr. Moir, in his next chain of instances, should crown all by an instance of the cholera going to a yet more distant relative per post, in the black edging of the funeral letter. Seriously, cannot men unriddle this dark history ? Can they not see, in the moonlight burial, and the fumigations, and the grave looks of the Board, and the averted footsteps of the neighbours, and the preachings and the fastings which are afflicting Scotland, can they not see, we say, in this every cause for terror in its intensity, and for the consequences of that terror, excessive predisposition amongst the unfortunate relatives ? Will any man make us believe, from what we have seen now and read, that the contagion of cholera is so virulent as to kill at this fearful rate, to strike a woman down on her entering an apartment (one fumigated, too, by the worshipful Board), and kill her ere the termination of a hurried funeral rite !

" Taking another illustration from the first six in the schedule of District First, I find a boy, W. B., aged seven, to whom I was called at six on the morning of the following day, Friday, the 20th. At eleven at night, a man lodging in the same house was also attacked ; and on the following the father of the boy. Within a week after, his youngest child, aged only three years, became also violently affected. Eight or ten other cases almost immediately shewed themselves, within a compass of thirty yards from this house ; and this at a time when whole districts of the parish remained totally uninfecte^d. Indeed, the whole history of the disease among us, from first to last, is nothing more than a consecutive series of examples, strikingly illustrative of the personal communicability of the contagion. That it can, besides, be conveyed by inanimate substances, is also very probable ; but the testimony on this subject is more difficult of attainment, while it is less capable of proof."

One patient we see, is attacked within 18 hours of another, and twelve or thirteen cases occur within a compass of thirty yards, whole districts remaining totally unaffected. Did the whole districts shut themselves up in their

gardens, or did the persons beyond the pale of the thirty yards, vote the sufferers from cholera nuisances, and draw a cordon around them? Why was the disease limited to so small a sphere—was there no communication save within it—were Mr. Moir and others washed and fumigated on leaving their patients within the thirty yards, to visit friends, patients, &c. without them? These are queries that present themselves to our weak fancies, which can hardly be answered by the doctrines of contagion, but may on the grounds which we and others have advocated.

"It is quite a mistake to suppose that the disease is either so erratic or whimsical, in its wanderings from district to district, as some would lead us to suppose; or that it will suddenly disappear, after having wreaked a desultory violence. This idea is founded on the erroneous supposition of its non-contagious nature, and a number of apparent illustrations have been brought forward in its support. The fact is, that cholera will nowhere abate, or pass away, while a victim susceptible of its influence remains, provided such be exposed so its contagion; and no doctrine more dangerous or destructive to the safety of society can be promulgated. Until all are made aware of the risk to which they are exposed—adopt every means of prevention—and keep beyond the pale of contagion, the disease will propagate itself—and re-appear—and again re-appear with renewed force. The necessity is therefore urgent for continuing every preventive restriction and regulation in full force; to isolate every case that can be so managed; and to render the concentration of the pestilential fomes less virulent, by feeding and clothing the poor, as well as attending to the purification and cleanliness of their dwellings. The fear has been suggested, that public panic may become so universal regarding the infectious nature of the disease, that it may be found impossible to procure the necessary attendants for the sick; but hire every where—or the nobler incentive of moral obligation in a Christian land—will ever be able to more than compass this end. But even

were it to act in a degree sufficient to, be somewhat felt—better, perhaps, that it should be so, than that thousands should be running themselves, without caution or warning, into the vortex of death—and not only becoming uselessly self-sacrificers, but the very vehicle for scattering the seeds of destruction everywhere around them."

If it be a mistake to suppose the cholera erratic, it is one into which abler men than we have fallen. But look at it now. It is in Edinburgh, Glasgow, many parts around: it came a little south of Sunderland, to Durham, but there it vanished: and now it is in London. This looks a little erratic. The only other evidence on the subject of contagion is to be found in the Appendix, for all works on cholera must have that. We have the old story of the Mauritius, and the Topaze frigate, and Moreau de Jonnés trumped up, as if men could now be employed better in looking carefully and without prejudice, for themselves than in hunting for contagion in foreign chronicles and compilations.

"As far as my personal observation extends, truth is entirely enlisted on the same side. From the appearance of the disease in Mid-Lothian, to the present moment, there has not been a single break in the chain of contagion—not a single instance in which its source was not to be traced. Since the illustrations I have noted were marked down, a third more remarkable sorites has occurred in the family of Mr. M—, a gentleman of extensive connexions in the mercantile world, and whose loss has been very generally regretted. Underneath his counting-room lived an aged dependent, Jeanie Findlay, who was taken ill on the morning of Saturday, 28th January, and died on the evening of the same day. *No suspicion of contagion attached to her death, although thus sudden, being in the eighty-fourth year of her age;* but on the Tuesday Mr. M.'s third son was seized with cholera,—himself, and eldest son, on the Wednesday,—and Mrs. M., on the Thursday. All died from the immediate attack of the disease except the first, who lingered on till the seventh,

day; and it was found that they had severally been sitting by the bedside of their old servant. As a still farther proof, however, that the contagion was thus engendered, two neighbours, Mr. and Mrs. H., who had gone in to see the old woman, also sickened and died; and on Monday, 30th, her son, R. Stewart, a shoemaker, having carried from her house to his own some articles of furniture, was shortly after taken ill. When called in to him, I found him in a state of collapse, from which he could not be resuscitated; and he died on the following morning. Within 24 hours of his death, his wife was also taken ill, and was sinking into the cold stage when seen. This, however, she was brought through; but being feeble and somewhat advanced in years, she fell a victim to the consecutive fever, five days afterwards. By unremitting exertions as to fumigations, the contagion has been checked, in so far as regards the other branches of the family."

Mr. Moir always leaves one link out in his contagious chain. How was the first old woman contaminated? We are told that no suspicion of contagion attached to her case. If there did not, the case gives Mr. M. a death blow at once; if there did, he should at least let us have it; if neither supposition is correct, but the English is at fault, we cannot help it. For the rest of the instances we refer to what we have already said, to what Mr. Lawrie and Mr. Greenhow say, and to our readers' common sense. But we have not quite done.

There can be no doubt at all that the mortality at Musselburgh has been fearful. We also think there can be little doubt that the secretary of the Board is a contagionist of the first water, and that probably he and the quorum do not greatly differ. Here then is a contagious board, acting up to their professions and belief, burying by moonlight, fumigating, promulgating notions of contagion without hindrance, inspiring panic to their heart's content. And what do we see? Victims are dying around them. The blessed seeds of contagion have been planted in the church-yard of Musselburgh, and they

have ripened, not like the dragon's teeth, into warriors, but into tombs. Happy Scotland, your physicians are taking all human means to dispatch you to the heaven, which your ministers are using all holy measures to prepare you for.

XI.

ON MALIGNANT CHOLERA IN ENGLAND.

By MR. DODD, OF HOUGHTON-LE-SPRING.

[*Lancet*, March 3, 1832.]

THE progress of truth is now more marked than the progress of cholera, in the northern parts of the isle. It will form a subject of astonishment to future medical historians that the nearer the epidemic approached to the "Modern Athens"—the "intellectual city"—the more did common sense desert the human mind, and superstitious terror usurp the place of reason! The cordons of the Russian Bear were scarcely less imperative and tyrannical than the police videttes of auld Reekie's magistrates to keep out the cholera of Sunderland and Haddington! As for contagion—Pooh! The Musselburgh Secretary demonstrated that cholera could not possibly be propagated in any other way than from man to man. Do our Caledonian confrères jump at the conclusion that, because a certain *national malady* is highly contagious, the cholera must also be so? We have no other way of solving the problem respecting the prevalence of contagious doctrines in the Land of Cakes. It was probably fortunate for science and for humanity, that the epidemic broke out on the banks of the THAMES, where a host of intelligent practitioners were instantly on the watch to mark its track. It was only this day (March 2,) that one of the most erudite and influential advocates of contagion declared his conviction, after a keen examination of the cases in Southwark, that the doctrine which he so strenuously upheld, must be given up, or greatly remodelled. This declaration does him infinite cre-

dit, and it is greatly to be wished that medical men would abandon preconceived notions, and permit their judgments to be directed by the evidence of their senses. But we must now introduce an extract from a paper of Mr. Dodd's, recently published in our contemporary, the *Lancet*.

"I feel some hesitation in advancing any thing in disproof of the now very prevalent opinion of the contagious nature of cholera; perhaps future contact with it, and a more dispassionate inspection of its workings and progress, should it ever again become a visitant amongst us, may elucidate this undecided question. Few of the continental writers, and amongst the rest Broussais, believe it to be a contagious disorder; and though the terms infection and contagion are, by the bulk of the profession, used synonymously, yet I am here inclined to give to each a distinctive signification. Cholera, in my opinion, is an infectious disease, inasmuch as it is received from a column of pestilent matter arising in, or borne to, certain districts, where it is attracted or detained by local causes hitherto unknown and undefined. I say undefined, as there has been so little regularity as to the kind of place where it has raged, contrasting it with those naturally productive of other endemic complaints; and cholera has been equally fatal amidst the isolated hamlets on the banks of the Tyne and Wear, as amongst the idle, depraved, and dissolute inhabitants of the crowded alleys of the sea-port town. As to contagion, using it in the sense of its derivative, I believe it to be totally inapplicable to cholera. Staggering instances have been adduced, where I have thought it difficult to withhold my conviction of its transmission by human intercommunication; but I have, in every case, been able to satisfy my own mind, that the patient had received the virus from an infected atmosphere, subjected to its operation at some distant point, whilst labouring under one or more of the predisposing causes which I am about to define.

The disposition to accept the choleric poison may be either *natural* and *hereditary*, or it may be *accidental*. That

there is a natural predisposition in some families to be infected with this disease, I have very little doubt; for I have seen many examples of the father, mother, and successively their children, succumbing to the overwhelming malignancy of its course, whilst other families living in their immediate vicinity, and having unchecked intercourse with them and other infected persons, have escaped. The individuals so attacked have always been of a leucophlegmatic appearance; indeed, I have never yet seen one of a healthy, sanguine, or florid complexion, die of cholera, and as I know many who have been attended by other practitioners, the same remark holds good.

The *accidental* predisposing causes are—grief, watching, fasting, want of cleanliness, innutritious and irregular diet, the depression which succeeds the excitement from drinking ardent spirits, utero-gestation and parturition; in short, whatever produces diminished energy of the nervous system, and lessens vascular action to the surfaces. Almost every case which I have been called on to treat or visit in conjunction with others, I have been able to trace to the intermediate operation of some of these causes, without appealing to the theory of contagion, when it is but assumed to exist.

The mode of an attack of cholera is not always the same, though its specific action tends, in every case, to depress the powers of life; but at what point or condition this resistive force is sufficient to oppose itself to the acceptance of the virus, I am unprepared to define. Those of a sanguine temperament, I assume, possess more of this resistive power than those of a pale complexion and languid circulation—*i. e.* putting aside the consideration of accidental causes which may affect them; but should any one, although naturally constituted and defended against the insidious approach of the disease, fall, through the operation of any of the accidental causes before enumerated, below *par*, whilst breathing a tainted atmosphere, he will, in all probability, be infected with cholera; but, on the other hand, as long as his body retains

sufficient energy—as long as the tone of his system rises superior to the depressive agency of cholera, he may breathe this pestilential matter, without danger of becoming one of its many victims.

In districts where cholera has raged as an epidemic, and I may mention particularly the High Downs, a colliery village in this neighbourhood, scarcely one individual has escaped being affected with some of its milder premonitory symptoms; this I attribute to the varying constitutions of the persons forming this little community, and the *actual* capabilities of resistance which each possessed; some succumbing at once to the more violent form of the complaint, whilst others remained uninjected, till some accidental cause, very often the effects of inebriety, rendered them capable of being so. We are all alike subject to the influence of this pestilential vapour, but the labourers of this district are placed under disadvantages from which the operatives of other classes are to a certain degree exempt; and toiling as they do, from early youth, breathing vitiated air at an excited temperature, are more liable to an attack of cholera, than he who lives in well-ventilated rooms, and enjoys better means of restoring the waste, which the comparatively less exhausting nature of his employments has produced."

External heat and friction were employed first, and, as soon as possible, a vein was opened and blood drawn. The next remedy administered was croton oil, which abated the spasms and restored the secretions. More recently calomel was employed, and with decided advantage. When vomiting and purging were excessive, the mustard emetic proved very beneficial. Mr. Dodd concludes with the observation, that VENESECTION is our sheet anchor in this disease. The paper is very creditable to the author.

XII.

NITRIC ACID IN TOOTHACHE.

Pembroke Dock, 1st Dec. 1831.

SIR,—In the Perisopic department of your highly-estimable Journal for October last, there is an extract from a paper published by Dr. Ryan, in a contemporary periodical, on the utility of nitric acid in toothache, which the Doctor states was found out by a Mr. Myers. Now although he may, by accident, as it is observed, have fallen upon the remedy, yet I trust you will do me the justice to insert this letter in your forthcoming Number, as laying claim to its prior discovery. During the Autumn of 1820 (eight years before Mr. Myers knew of its employment), I suffered greatly from toothache; and after adopting every known means of relief, short of extraction, I was induced to try the application of nitric acid, upon the principle of its destroying the sensibility of the exposed nerve; it had the desired effect in that instance. The tooth is still in its place, and has never ached since. From that period, I have been in the habit of using it pretty freely, and with considerable success.

Knowing that "*est natura hominum novitatis avida,*" I should, ere now, have published the efficacy of this plan, but have waited hitherto for the test of experience, which alone, like Ariadne's silken clue, can lead us out of the Cretan labyrinth of theory and speculation. I have found the acid most serviceable when the affected tooth has been situated in the lower jaw, from the greater facility of its introduction into the cavity. When in the upper, the difficulty is greater and the success less certain. A tumbler of cold water should always be at hand, into which the finger is to be instantly dipped, and applied to any part of the tongue, cheek, or gum touched by the acid.

With the other remarks of Dr. R. I bear testimony and fully coincide; and have the honor to be,

Sir,
Your obedient Servant,
W. THOMAS, M.R.C.S.

XIII.

PARTS II. AND III. OF THE PRINCIPLES
AND PRACTICE OF OBSTETRIC MEDICINE,
&c. By DAVID D. DAVIS,
M.D. &c.

In the second fasciculus Dr. Davis gets through the anatomy of the pelvis, and takes up the subject of diseases of the same, as distortion from rickets, from mollities ossium, &c. In the 3d chapter of this part, the Doctor examines, with his usual ability, the structure and diseases of the external genitals. From this chapter we shall extract the narrative of a curious case of pruritus occasioned, as Dr. D. supposes, by exuberance of hair.

"A case of severe pruritus of the genitals occurred in the author's practice about two years ago, in the instance of a young married lady, who was the mother of one child. She was not the subject of ascarides, nor of any other intestinal worms. The uterus was healthy in structure and functions. There was no eruptive affection either of the vulva or vagina. The contents of the bladder were voided without pain or difficulty. It became a matter of suspicion, that the mons veneris might be the seat of a pedicular affection. This was not the case. But the opportunity of examination conceded for ascertaining that point, led to the discovery that the entire pudendum, together with its neighbouring surfaces even to distant portions of the common integument, the posterior perinæum, the whole of the hypogastrium, and even parts of the abdomen intermediate between the umbilicus and scrobiculus cordis inclusive, were covered with a most extraordinary quantity of hair. The subject of this history having been more or less harassed with the pruritus, which she was now suffering, since the commencement of her fourteenth year, when she menstruated for the first time; it did not seem quite foreign to the probabilities of the case, to conjecture that this superabundance of the hairy covering of the pubes might, by promoting the evolution and retention of an undue phlogosis in the uterine

system, act as an indirect cause of the distressing symptom. This presumption was, at all events, acted upon, and the patient was furnished with an unguent consisting of two parts of quick-lime, and six of strongly-scented pomatum, accompanied with directions to apply it by friction to the mons veneris and contiguous integumental surfaces twice a day. These operations were more than once obliged to be suspended in consequence of the irritation, amounting to a slight fretting and inflammation of the cutis, which they occasioned. In about two months, a very large proportion of the hairy covering was removed; and as the process of depilation advanced, the author had the pleasure of observing, that the patient experienced a sensible abatement of her pruritus, whilst about the middle of the third month, subsequently to the commencement of the practice, the symptom had entirely ceased. To leave no room for misapprehension or miscalculation of effects, the author deems it his duty to add that, inasmuch as this treatment was adopted as a matter of experiment, to which he attached no very eager expectation of success, it was throughout accompanied by the exhibition of alterative and aperient medicines, and of lotions and injections of various kinds to the vulva, vagina, and uterus. The subject of the case has never experienced a return of her complaint."

The plica of Poland is briefly alluded to, as also a peculiar conformation observed about the pubes of Egyptian women.

In the third part or fasciculus, Dr. Davis continues the diseases of the external organs, and the whole is very well handled by this industrious and experienced Professor. The plates accompanying these parts are very creditable. We shall have more and better opportunities, hereafter, of noticing the parts as they come forth. Meantime, we may venture safely to recommend the work to all our obstetric readers, and especially to the aspirant for professional reputation in that department of medical science.

XIV.

LETTERS UPON CHOLERA MORBUS, WITH
OBSERVATIONS UPON CONTAGION,
QUARANTINE, AND DISINFECTING,
FUMIGATIONS. By WILLIAM FER-
GUSSON, M.D. Inspector General of
Hospitals. 8vo. Stitched, pp. 39,
London, 1832.

Those who know Dr. Fergusson need not be informed by us that the excellence of his heart and the goodness of his understanding have alike prompted him to come forward on the present occasion, and to lend his powerful aid in dispelling the panic so injurious to this country in every point of view. It is indeed to be wished that every honest man should do his best to promote so useful, nay we may say so holy a purpose, as *unfrighting* the isle from the paroxysm of terror into which it has been thrown. The mischiefs from excess of confidence are not to be compared for a moment with those from excess of fear, and though every term of obloquy and reproach has been heaped upon the heads of those who are conscientiously engaged in endeavouring to dispel injurious alarm, we do repeat our exhortation for all members of our profession, who aspire to be good citizens and philosophic men, to labour in private and in public in that honourable cause. Supposing the doctrine of contagion to be true, and taking it in the sense and to the extent to which the contagionists carry it we firmly believe it is not, yet supposing for the sake of argument that it is so, we do conceive and contend that infinitely more evil than advantage would accrue from dinnin it into the public ear. Some men never seem so happy, as when they are penning articles to prove the disease most malignant and terrific, most infectious and pestilential; they dwell with an obvious satisfaction on the lists of the dying and the dead; rub their hands and chuckle on its irruption into some new village, town, or district; and wear a mortified and peevish air if you hint that the daily numbers of the victims have decreased. No crime is so heinous

in the eyes of these gentlemen, as a disposition to look at the fair side of the picture, no offence so monstrous as an attempt to make the public easy. It is quackery, and humbug, and folly, and what not; in short these Mr. Surlys are determined to be miserable themselves, and, so far as their power goes, to render the remainder of the world so. If indeed any good could come from fear one might feel disposed to excuse them, but as they admit themselves that panic is injurious, we can conceive no earthly reason why they should wilfully and wantonly persist in provoking it. But it is hard to kick against the pricks, and still more difficult to persuade people out of violent and obstinate party feeling. Nothing will make them cease to cry wolf, save a consciousness that the world is not inclined to listen to them.

In reference to the contagiousness of the disease, Dr. Fergusson alludes to the fact now notorious, of the perfect impunity with which crowds of medical men from all nations visited the north of England and hunted for cases of cholera. He also alludes to an absurdity of the contagionists, which no evidence will ever make them willing to abandon, we allude to their assertion that cholera always follows the great channels of human intercourse. Thus it has been for a month (we write on the 4th of March) in the Borough, and we ourselves saw it some two weeks ago, at the very foot of the Southwark and of Blackfriar's bridge, yet it has not hitherto contrived to cross the London Bridge, or effect a lodgement in the city, whilst it is at Lambeth, Chelsea, Newington Butts, &c. But the contagionists will probably say that London and Blackfriar's bridges, cannot properly be considered as examples of "the great channels of human intercourse." They need not be afraid to utter such opinion; it is as good as most, and better than some of the logic they do venture on.

" So far from always following the stream and line of population as has been attempted to be shown, it has often run directly counter to both, seldom or never desolating the large cities

of Europe, like the plague and other true contagions, but rather wasting its fury upon encampments of troops, as in the east, or the villages and hamlets of thickly-peopled rural districts.

That it could have been described on no other than the above line must be self-evident, but to say that it has followed it in the manner that a contagious disease ought to have done, in our own country for instance, is at variance with the fact. From Sunderland and Newcastle to the south, the ways were open, the stream of population dense and continuous, the conveyances innumerable, the communications uninterrupted and constant. Towards the thinly-peopled north how different the aspect,—townships rare, the country often high, cold, and dreary, in many parts of the line without inhabitants or the dwellings of man for many miles together, yet does the disease suddenly alight at Haddington, a hundred miles off, without having touched the towns of Berwick, Dunbar, or any of the intermediate places. It is said to have been carried there by vagrant paupers from Sunderland. Can this be true? Could any such with the disease upon them in any shape, have encountered such a winter journey without leaving traces of it in their course?* or, if they carried it in their clothing, the winds of the hills must have disinfected these *fomites* long before their arrival. No contagionist, however unscrupulous and enthusiastic, nor quarantine authority however vigilant, can pretend to say how the disease has been introduced at the different points of Sunderland, Haddington, and Kirkintilloch,—no more than he can tell why it has appeared at Doncaster, Portsmouth, and an infinity of other places without spreading. Even now, it lingers at the gates of the great open cities of Edinburgh and Glasgow, as if like a malarious disease, (which I by no means say that it is) it better found its food in the hamlet and the tent, in

fact, amongst the inhabitants of ground tenements, than in paved towns and stone buildings. We must go farther and acknowledge, that for many months past our atmosphere has been tainted with the miasm or poison of Cholera Morbus, as manifested by unusual cases of the disease almost everywhere, and that these harbingers of the pestilence only wanted such an ally as the drunken jubilee at Gateshead, or atmospherical conditions and changes of which we know nothing, to give it current and power. That the epidemic current of disease wherever men exist and congregate together, must, in the first instance, resemble the contagious so strongly as to make it impossible to distinguish the one from the other, must be self-evident; and it is only after the touchstone has been applied, and proof of non-communicability been obtained, as at Sunderland, that the impartial observer can be enabled to discern the difference.—Still, however, must he be puzzled with the inexplicable phenomena of this strange pestilence, but if he feel himself at a loss for an argument against contagion, he has only to turn to one of the most recent communications from the Central Board of Health, where he will find that "That the subsidiary force under Col. Adams, which arrived in perfect health *in the neighbourhood* of a village of India infected with Cholera, had seventy cases of the disease the night of its arrival, and twenty deaths the next day," as if the march under a tropical sun, and the encampment upon malarious ground, or beneath a poisoned atmosphere, were all to go for nothing; and that the neighbourhood of an infected village, with which it is not stated that they held communication, had in that instantaneous manner alone, produced the disease. This is surely drawing too largely upon our credulity, and practising upon our fears beyond the mark."

As disinfecting agents, Dr. F. recommends heat, light, water, and air, and they are infinitely better than all the chemical compounds that ever were issued from a laboratory. Can any thing be better than the high, we had almost

* The Cholera in this country would appear always to travel with the pedestrian, and to eschew the stage-coach even as an outside passenger.

said chivalrous, tone of the following passage, and when such are the sentiments which animate the bosoms of all who have come forward as "anti-contagionists," in the proper sense of the term, can any thing be more dastardly, and more impotently absurd, than the attempt to stigmatize such men as bent on injuring society, for the paltry personal advantage of notoriety. So far from its being the interest of medical men, in London, to take a prominent part on this side of the question, it is quite the reverse. By so doing, they array themselves, in some measure, against authority—make public enemies, and too certainly offend many private friends—expose themselves to present derision and abuse—and should circumstances in any way run counter to their hopes or their expectations, are assailed with every engine of vituperation, which malevolence and furious party vengeance can employ. There is every thing to lose and nothing to gain, in a personal point of view, and only a professional zeal and enthusiasm, which cold-blooded calculators cannot comprehend and therefore malign, has tempted men to venture, as they have done, before the public, in order to serve it in a trying moment.

"It may then be asked, have we no protection against this fearful plague? No means of warding it off? Certainly none against its visitation! It will come—it will go; we can neither keep it out, or retain it, if we wished, amongst us. The region of its influence is above us and beyond our control; and we might as well pretend to arrest the influx of the swallows in summer, and the woodcocks in the winter season, by cords of troops and quarantine regulations, as by such means to stay the influence of an atmospheric poison; but in our moral courage, in our improved civilization, in the perfecting of our medical and health police, in the generous charitable spirit of the higher orders, assisting the poorer classes of the community, in the better condition of those classes themselves, compared with the poor of other countries, and in the devoted courage and assistance of the medical profession every where, we

shall have the best resources. Trusting to these, it has been found that, in countries far less favoured than ours, *wherever the impending pestilence has only threatened a visitation, there the panic has been terrible, and people have even died of fear*; but when it actually arrived, and they were obliged to look it in the face, *they found, that by putting their trust in what I have just laid down, they were in comparative safety*; that the destitute, the uncleanly, above all, the intemperate and the debauched, were almost its only victims; that the epidemic poison, whatever it might be, had strength to prevail only against those who had been previously unnerved by fear, or weakened by debauchery; and that moral courage, generous but temperate living, and regularity of habits in every respect, proved nearly a certain safeguard. They found further, *that quarantine regulations were worse than useless*—that the gigantic military organization of Russia—the rigorous military despotism of Prussia—and the all-searching police of Austria, with their walled towns, and guards and gates, and cordons of troops, were powerless against this unseen pestilence, and that as soon as the quarantine laws were relaxed, and free communication allowed, the disease assumed a milder character, and speedily disappeared.

I say, then, confidently, that Cholera Morbus never will commit ravages in this country, beyond the bounds of the worst purlieus of society, unless it be fostered into infectious, pestilential activity, by the absurd, however well-meant, measures of the conservative boards of health, such as have been just recommended in what has always been esteemed the most influential, best-informed journal of England, I mean the QUARTERLY REVIEW."

We do not believe that the quarantine that actually was established in this country, contributed to protract the establishment of the epidemic among us for a single day; nor that, if their turns are to come, will the cordons and coast-guards of foreign governments achieve more than ours have done. The following facts are most important; they would open the eyes of Bigotry, if

Bigotry's eyes could be opened. They are sealed with a sleep ten million times deeper than Nourjahad's.

" My friend, Doctor Stanford, of the Medical Staff, now settled here, has given me the following valuable information, which my own observation confirms, regarding the agency of panic, in promoting the diffusion of epidemic disease. He happened to be serving with part of the British army, at Cadiz, when an eruption of yellow fever took place there, in the Autumn of 1813, and as usually happens amongst medical men, the first time they have seen that fever, some of them were stanch contagionists, and impressed that belief upon the corps to which they belonged. *In all these the disease was most fatal to great numbers.* The men being half dead with fear, before they were taken ill, speedily became its victims, to the great terror and danger of their surviving comrades; *but in the other regiments, where no alarm had been sounded, the soldiers took the chances of the epidemic with the same steady courage they would have faced the bullets of the enemy, in the lottery of battle;* escaping an attack for the most part altogether, or if seized, recovering from it in a large proportion. From this picture let us take a lesson, in case the impending epidemic should ever come to spread in the populous towns of England, and the cry of contagion be proclaimed in their streets. The very word will spread terror and dismay throughout the people, causing multitudes to be infected, who would otherwise, in all probability, have escaped an attack, and afterwards consign them to death in despair, when they find themselves the marked and fated victims of a new plague. Whatever they see around them, must confirm and aggravate their despair, for desertion and excommunication in all dangerous diseases, too certainly seal the fate of the patient. It will be vain to tell them that hireling attendance has been provided,—the life of the Choleraic depends upon the instant aid—the able-bodied willing aid of affectionate friends, who will devote themselves to the task, and persevere indefatigably to the last. If these be

driven from his bed, his last stay is gone, for without their active co-operation, the best prescription of the physician is only so much waste paper. What, let me ask must have been the fate of the patient, and what the consequent panic, if the case of Cholera that occurred in London a month ago, at the Barracks of the Foot Guards, had been proclaimed, and treated as a contagion? The poor fellow was promptly surrounded by his fearless comrades, who with their kind hands recalled and preserved the vital heat on the surface, by persevering in the affectionate duty of rubbing him for many hours; but had the Medical Staff of the regiment been true contagionists, they must, as in duty bound, have commanded, and compelled every one of them to fly the infection. It depended upon them, to have spread around a far wilder and more dangerous contagion than that of Cholera Morbus, or any other disease,—the contagion of fear—and from what occurred at Cadiz, as above related, it is to be hoped our medical men will now see how much they will have it in their power, when Cholera comes, to pronounce, or to withhold sentence of desolation upon a community. The word Contagion will be the word of doom, for then the healthy will fly their homes, and the sick be deserted: but a countenance and bearing, devoid of that groundless fear, will at once command the aid, and inspire the hopes that are powerful to save in the most desperate diseases.

It is stated, in a Scotch newspaper, that two poor travellers, passing from Kirkintilloch to Falkirk, ran the risque of being stoned to death by the populace of the latter place, and were saved from the immolation only by escaping into a house; and in an Irish one, that some shipwrecked sailors incurred a similar danger. Such barbarities must, in the nature of things, be practised every where under a reign of terror, however humane or christianized the people may be—even the fatalism of the Turk would not be proof against it. In Spain they have been enacted in all their horrors (thanks to the quarantine laws) upon the unfortunate victims of

yellow fever : and we shall soon see them repeated amongst ourselves, unless the plain truth be promulgated by authority to the people. Let them be told, if such be the pleasure of our rulers (for it is not worth while disputing the point), that Cholera Morbus is a contagion, but of so safe a nature in regard to communicability, that not one in a hundred, or even a thousand, take the disease,—that in this country, besides being a transient passing disease, which according to certain laws and peculiarities of its own, will assuredly take its departure in no long time ; it is limited almost always to particular spots and localities—that it is in their own power, while it remains, to correct the infectious atmosphere of these spots, by attention to health police—that they may fearlessly approach their sick friends with impunity, for that the danger resides in the above atmosphere, and not in the person of the patient ; and that in all situations they may defy it, for as long as they observe sobriety of life and regularity of habits. Thus will public confidence be restored, and thus be verified the homely adage of, ‘honesty, in all human affairs, being ever the best policy ;’ for the concealment, or perversion of the truth, however much it may be made to serve the purposes of the passing day, can never ultimately promote the ends of good government and true humanity, but must lead, sooner or later, to the exposure of the delusion, or what would be far worse, to the perpetuation of error and prejudice, and grossest abuse of the people, in regard to those interests committed to our charge.”

Dr. Fergusson deserves the thanks of all friends to mankind for these Letters.

XV.

A LETTER TO THE LONDON BOARD OF HEALTH, OFFERING A NEW, CONCISE, AND INTELLIGIBLE VIEW OF THE LEADING PHENOMENA OF THE PRESENT PESTILENTIAL CHOLERA, BY WHICH A RATIONAL, SIMPLE, AND SUCCESSFUL METHOD OF TREATMENT

IS ATTAINED. By THOMAS BROWN, Senior Medical Practitioner, &c. &c. Musselburgh. Octavo, stitched, pp. 40. London, 1832.

It appears to be admitted on all hands, by contagionists and anti-contagionists, ultras and moderates, journalists blue, green, and yellow, in fact by all men of all parties, that nothing is so conducive to health, nor so powerful in warding off cholera, as a cheerful indeed jocose state of mind. It is on this account that we notice the pamphlet before us ; and we venture to indulge the hope, that such of our readers as may honour the present article by their perusal, will find themselves steeled against the pestilence for at least the succeeding twenty-four hours. Mr. Brown is the partner of Mr. Moir, who is secretary to the Musselburgh Board of Health, who wrote a pamphlet to prove the cholera contagious, and who has found a niche in our columns which we trust he will like. Mr. B. addresses his Letter to the London Central Board, a compliment of which we have no doubt the members of that body will feel proud. The mortality at Musselburgh has been so great, that both the profession and the public have been anxious to ascertain what peculiar and local circumstances could have made it so. In our notice of Mr. Moir’s production, we have hinted at one not impossible cause of that fatality, the ultra-contagiousness of the Board and the doctors. We shall see that this idea derives fresh strength from Mr. Brown’s letter. Mr. B.’s experience differs from that of the Indian practitioners, and he thinks it necessary to let the world and the Board of Health know why.

“ I must also be permitted to add, that I consider myself to be bound to do so, from having had an ample opportunity of trying my opinions by the test of experience, which has confirmed them by the success of our practice ; and I flatter myself it will be ultimately found, that although I do not enter minutely into the subject, still I shall make my opinions sufficiently plain and intelligible, and will have contributed my mite to the public advantage.

Before proceeding further, it may be proper to notice, that Mussleburgh is situated on the river Esk, close by the sea ; and the town, as well as the parish of Inveresk, is nearly equally divided *through its whole extent by the river*. The parish contains a population of somewhat above 9100, and the town of Mussleburgh and its immediate connexions about 7500 of this number. The town is open and well aired, and its soil in general dry, and is nearly equal in warmth, and has less rain, than perhaps any parish in Great Britain. Notwithstanding these advantages, our population may be described as *vicious, immoral, and miserable* ; a full half being liable to the vice of all others the most destructive to religion and morals,—I mean drunkenness. This state, however, it must be observed, has not been produced by any innate viciousness or folly, but has arisen entirely from the unparalleled continuance of the last war, whereby Mussleburgh, being a favourite station for the army, was inundated with 1500 soldiers, and all their unpleasant concomitants, for the space of twenty-two years. As a proof of the healthy situation of the whole town and parish, I may state from personal experience, during forty-four years, that I have never had a single case of Ague occurring periodically ; and before the improvement in agriculture, I have known all agricultural labours at a complete stand, from the farmers' servants being laid up by Ague ;—and only when crowded with the military, together with high-priced provisions, and other causes of misery, were liable to Typhus. For these last twelve months, poverty, conjoined with the vice of drinking, and wretched accommodation, has been again operating very extensively ; and we were suffering considerably from Typhus, when this horrible pestilence appeared, and which has, in the short period of little more than five weeks, carried off nearly 250 of the inhabitants, being about one in every thirty-five of the parish, and nearly equal to twenty months of the usual mortality ; and before we finally get rid of this dreadful scourge, our deaths, I have no doubt, will amount

to 300, being nearly one in thirty of the whole population."

Thus it seems that Musselburgh is divided by a river—that its population is vicious, immoral, and miserable—that at the time when cholera appeared, it was suffering from typhus—that Mr. Brown is its senior surgeon, and that his partner is Mr. Moir—and last, not least, that its board and its doctors are contagionists to the back-bone. We need not be surprised at the havoc which the cholera has made in this fortunate locality.

"It is also deserving of particular notice, that there has not been one individual affected with the Cholera in Musselburgh, who lived in a front house, or was unconnected with closes or alleys."

Oh, ho ! So none but those connected with closes or alleys were affected even in Musselburgh. Were none but those so situated exposed to contagion ? Let Mr. Brown be permitted to answer.

" I must here avail myself of the publication of my friend and partner Mr. Moir, and refer you to it for a complete refutation of the doctrine of the anti-contagionists ; I shall, however, observe, that when I have enquired what these gentlemen meant, in answer to the *notorious fact, of every one infecting another, from absolute contact, either in their persons, apartments, or clothes, or with some one or some thing with which they had had connexion*, you really can obtain nothing but the most vague, indefinite, and wild answer, which it is impossible for any one accustomed to the examination of data really to comprehend, or put into the shape of probability. It is as clear as noon-day that it is contagious ; but these gentlemen insist that it is also epidemic, without offering any reason, but that it cannot be proved in *every instance* to have been transmitted by contact,—a request deserving of not the very least attention ; because whoever attends to the communications existing in the present state of society must be at once satisfied, that there can be no want of opportunities of contact always being afforded ; and although these gentlemen were accidentally to lay their hands upon one, who will not confess

that they have been in contact with the disease, I should be glad to know the value of such, when it is well known to us all, with what difficulty we confess any fault, and especially, at present, the fault of transmitting Cholera; particularly, too, when this charge attaches to those who would have no great delicacy about the matter at any time."

"So the disease is not epidemic nor endemic, but always contagious. Yet this same Mr. Brown informs us that it never appeared but in those connected with closes or alleys, whilst he is kind enough also to shew, or rather to admit, for all must know it, that *every one* is exposed more or less to the influence of contagion. To ask Mr. Brown to explain this or to explain himself would be unfair, as it would be nothing less than asking an impossibility. Some charitable persons may think that we have been hard on the Musselburgh Board, and suspect that we have accused them of more folly in their contagiousnesses than they deserve. Let the following extract form our defence.

"The means which the profession have employed here, for preventing the infection spreading in the houses and apartments of those labouring under the disease, are, fumigating, with the means already mentioned, with the addition of the fumes of the nitric and muriatic acids, burning tar, turpentine, vinegar, fumes of tobacco, flashing gunpowder, throwing vinegar and spirits of camphor throughout the apartment, and paying great attention to keeping the bed-clothes and surface of the body wholesome by cleanliness, and sprinkling of vinegar mixed with spirit. When death has ensued, and the family removed, or whether or not that can be obtained, the house is whitewashed with hot lime. *From the steady use of these means, we have, in general, succeeded in checking the farther spread of the pestilence in the immediate dwellings; and have also found them of great benefit in further securing the public safety.* With regard to myself, for the first five or six days of the Cholera raging here, I was quite

sensible of its exerting an influence over me, such as headache, sickness, coldness of the surface, and pulse about 96, with a disordered state of the stomach and bowels; but by taking care never to visit any one before swallowing some breakfast, *with half a glass of the very best brandy after it*, again taking *a glass of the very best port or sherry about one o'clock*, with a biscuit, and dining regularly at, or as soon after four as possible, upon a plain but *rather solid diet*, and with *two or three glasses of port wine*, if soup or fish made no part of my diet; but if I ate of several dishes, I preferred the good old Scottish custom of *a dram to the wine*, and found myself always *much lighter* after this last practice. I never used tobacco, although I have recommended it to general use, in any form; but I washed my temples and forehead *with aromatic vinegar*, and spirits of wine and camphor, mixed with a little water, every time I returned home, and also applied the mixture to my clothes, and these, together with *chewing cinnamon*, and keeping a regular state of the bowels, formed the whole of my defence; and in eight days I got the better of my different ailments; my pulse became regular, and I now enjoy better health than before the scourge came amongst us."

So the tar, turpentine, gunpowder, camphor and the cart loads of other rubbish were found of great benefit in securing the public safety! Mark that; the PUBLIC SAFETY. Is it not laughable, or rather abominable, that we should be coolly told that the public safety was secured in a place rendered famous by mortality only. The public safety indeed! The passage should be written thus: "From the steady use of these means, we have, in general succeeded in promoting the farther spread of the pestilence in the immediate dwellings; and have also found them of great benefit in further securing the public destruction."

We are not a little struck at the different manner in which Mr. Brown proceeded in his own case. The public may imagine that contagionists practise what they preach—that they fumigate

themselves so many times a day—sprinkle their clothes with nitric and muriatic acids—put gunpowder in their waistcoat pockets—and burning tar in their inexpressibles. No such thing; these gentlemen take care to apply the spirits to the inside rather than the out. Mr. Brown's mode of treating himself gives a lively and graphic picture of the hygiene of one of this school. Let us see; there was half a glass of the *very best* brandy in the morning to start with—a glass of the *best* port or sherry at one p. m.—two or three glasses of port at four p. m.—and, oh luxury, if *several* dishes were eaten of, an additional *dram* to the wine. The singular part of this diary of an invalid consists in the fact, that he was *lighter* after these superlatively good things. However disposed to cavil at mere doctrinal points, we are forced to confess, that when we come to practice we can take no reasonable exception against Mr. Brown. We must only regret that himself, Mr. Moir, and the Board, did not treat their neighbours as themselves, and, instead of arointing the poor with burning tar and gunpowder, that they did not distribute a little of that very best brandy and port which they poured so liberally into their own stomachs. We have great pleasure in drawing the attention of the Londoners to the following caution.

"No female servant should be allowed to go out of doors, and nobody's servant allowed to come into the house. Bakers and butchers, &c. should be dismissed instantly upon delivering their errand; in short, high and low should assist and forward the grand object of public safety, by cheerfully submitting to every subordination which those in authority think necessary in the present emergency. They should also conduct themselves with moderation and propriety, and show a proper feeling under the present scourge. There should be no general revelling, feasting, and extravagance, the public distress giving a ready vent for all our superfluous enjoyments."

It will naturally become an anxious subject of inquiry, whether the prohibition is to be extended to male servants,

and if it is not, why? It will also be important to ascertain whether or not butchers and bakers ought to be permitted to come to our houses at all, for timid persons may imagine that if they stop long enough to give their meat and bread, and errands, and receive fresh orders in return, the mischief is already done, and the cholera is as likely to make its entrance as the mutton.

"I cannot allow this subject to escape from me, without adding one word more, and that is, to declare that no nation deserves, or can thrive without religion and morals being made its foundation. I am afraid the one received its death-blow nearly three years ago, and the low price of whiskey in Scotland will finish what remains. It is imperatively demanded that the landed proprietors, the church, and the public must instantly apply to government for the only remedy—raising spirits to ten or twelve shillings per gallon."

So it seems that religion and cheap whiskey can never go together, not even in the moral atmosphere of Scotland. The minimum of sound presbyterianism, is when whiskey is at ten shillings per gallon; under that, it is no better than episcopalianism, it is even a tinkling cymbal. It would perhaps be unprofitable to enquire whether the best brandy and port, are so unfavourable to heavenly thoughts and aspirations, as whiskey, the spirit of the poor. How it glads a rich man to denounce the vices and infirmities of paupers. The tenant of the club sits him down and dines on the fat of the land, drinks his pint or his bottle of good old wine, and heaves a sigh at the immorality of the wretched artisan, who hurries to drown misery and care in a quartrein of gin. The religious world cries out for restrictions on the atrocious wickedness of the lower orders—sends the pestilence upon them as the wrath of the Divinity—and imposes in addition the mischievous cruelty of human power.

We have very little more to say to Mr. Brown. He thinks that the present *only* differs from common cholera arising from heat, as it has acquired the adjuncts of being *unconnected* with warm weather, as being more putridly

malignant, and as possessing distinctly a highly contagious property." Very slight differences, indeed. The following is another profound observation.

"I am also satisfied, that the situation of my patients clearly evinced, that if the evacuations had not already gone on to the extent of carrying away all offending matter, they had, at all events, existed to the extent of reducing the patient to a state of *articulo mortis*, so that every further effort in *that way* appeared evidently not only to be useless, but likely to be followed by the most fatal results."

The *articulo mortis*, in Italics, belongs to Mr. Brown, not to us. The judicious reader will observe the climax, as well as the Latinity of the passage. Mr. Brown admits the injurious influence of fear; indeed we should attach high value to his opinion on this point, as he seems to have had some personal experience of the effects of alarm, and, thanks to the judicious measures of himself and his friends, must have had an opportunity of witnessing its effects on a large scale. To dissipate it, he recommends carminative purgatives. We should advise the instant abolition of any board, acting on such notions as the Musselburgh sages appear to have done.

XVI.

PARTIAL FRACTURE OF THE LONG BONES
IN CHILDREN. By J. HART, M.R.I.A.
&c. &c.

At length the silent city, for the silence of its university is typical of itself, has put forth a medical periodical. Yet the effort appears to have been a great one; and Medicine alone has not yet felt able to shake off the lethargic drowsiness which oppressed her, without the friendly aid of Chemistry. The journal which has just seen the light in Dublin, and of which the first number is now before us, is entitled, the Dublin Journal of Medical and Chemical Science. It consists of 116 pages, 56 of which are devoted to original commu-

nlications—17 to bibliographical notices, and the remainder to articles of miscellaneous intelligence. Whether it is to be monthly, quarterly, semiennial, we are not officially informed, nor, strange to say, do we find the usual prospectus, which tells how such a publication is wanted, and how lamentably deficient all existing sources of periodical information are acknowledged to be. We hail with pleasure our contemporary from the green isle, though, by the bye, its wrapper is of deep yellow, and need scarcely say that we wish it all success. It is at present too late to give an adequate notice of many of the useful papers it contains, and we must content ourselves with the first, because it is the shortest. It is on the partial fracture of the long bones, which is frequently met with in practice.

"The bones differ very much in the relative proportions of the animal to the earthy part entering into their composition at different periods of life, a circumstance which materially affects both their liability to fracture, and the length of time necessary for the accomplishment of re-union in individuals of different ages.

Thus, in infancy and childhood the animal part of the bones bears a greater proportion to the earthy, whence they possess a greater degree of flexibility. It is owing to this that fractures rarely happen in young children, notwithstanding the many falls to which they are subject, before they have acquired the power of maintaining their equilibrium in their earlier essays in walking.

On the other hand, the bones of persons advanced in life are harder and more brittle, in consequence of the accumulation of an increased proportion of the earthy part, to which is to be attributed the more frequent occurrence of fractures of the long bones, in elderly persons especially.

As the bones of children are less liable to fracture from the cause assigned above, so is the process of their re-union more speedily accomplished, inasmuch as their growth being still in progress, the blood-vessels engaged in the function of their nutrition are in a more vigorous state of action; while in the case

of older persons, whose bones contain a less proportion of the animal part, and more of the earthy or saline constituents, re-union proceeds more slowly, because ossification being completed, the nutritious blood-vessels which were actively engaged in that process have fulfilled the task which was allotted to them, after which these vessels undergo a diminution in size, and a corresponding relaxation in their activity.

While the long bones of children are still soft and flexible, they are subject to a kind of injury, the occurrence of which is incompatible with the brittleness of the same organs in adults. This injury is a fracture which extends through a part of the diameter of the bone, the remaining part becoming bent in the manner in which a branch of a tree yields to an attempt to break it while it still retains its sap.

It has fallen to my lot to meet with five cases of this injury within the last three years, one of which occurred in the humerus, two in the radius, and two in the femur, and as this kind of fracture is not particularly described in any of our systematic works on Surgery, nor in any periodical publication to which I could obtain access, I shall briefly notice the particulars of one case, and conclude this Paper with one or two remarks on it.

Tuesday, February 10th, 1831, I was called to see Richard K., a child aged ten months, in consequence of an accident, of the nature of which his nurse affected ignorance. I found him labouring under the following symptoms: pain caused by handling the left thigh, which presented a marked deformity, having an angular projection forwards about its centre. On comparing this limb with the opposite one, it did not appear shortened, nor was there any turning out of the toes. A straight line from the great trochanter to the outer condyle, measured about a quarter of an inch less, while a line from the great trochanter obliquely across the front of the thigh to the internal condyle of the femur, gave a little better than a quarter of an inch more than

similar measurements made on the opposite thigh.

I applied splints and bandages, which were removed on Saturday, the 21st, the eleventh day from the occurrence of the injury, when firm union had taken place. At this time the limb differed from the opposite one in no other respect than in having a slight prominence on the front of the femur, at the place where the fracture had occurred.

January 16th, 1832. I this day saw the child, R. K., eleven months after the accident. There is no perceptible difference between the lower limbs of both sides, with the exception of a slight ridge which can still be felt on the front of the femur at the place of the former injury. He is beginning to walk, and makes equal use of both limbs.

The diagnostic symptoms of this affection are very simple, they are the following: pain and a bent state of the bone injured, without absolute shortening of the limb; on the contrary, it is lengthened on the side to which the ends of the fractured part of the bone project. By attending to these circumstances, it will be always easy to distinguish this injury from ordinary complete fracture.

Treatment. The first indication in the treatment is to straighten the bent bone; to effect this, much care and delicacy of manipulation are required, for if it be rudely attempted with a force too great or too suddenly applied, the part of the bone which was merely bent may be broken, and the fracture rendered a complete one, the difficulty of treating which without deformity, will obviously be greater in a child, than in a person who can understand the necessity of submitting to restraint.

The next indication is to prevent the recurrence of the deformity, and to keep the fractured surfaces in contact until they become united by callus, and this is to be fulfilled by the judicious use of splints and bandages, as in ordinary fractures.

I need hardly remark on the shortness of the time (eleven days) in which re-

union was completed in the above case: it illustrates the principle laid down in the commencement of this Paper, which refers to the rapidity of the reunion of fractures in children, owing to the more active state of the vessels engaged in the business of ossification at that period of life."

We have seen many instances of such incomplete fracture, and, unless our memory greatly belies us, have related some in a former Number of this Journal, though we have not leisure to search for them at present. However, we have twice seen this accident in the clavicle, once in the tibia, twice in the femur. We would particularly direct attention to a modification of fracture, probably of this description, which occurs in the bones of the fore-arm. We have seen three instances of what we are about to mention. A boy receives a fall, and in endeavouring to save himself, the weight of the body is received upon the outstretched hand. He applies to the surgeon, with the bones of the fore-arm bent either towards the palmar or dorsal side. They are obviously curved, nay, they even form an angular projection, and moderate force is quite ineffectual in restoring them to their proper shape. In each case we put the fore-arm across our knee, used considerable force of the leverage kind, heard the bones give an audible snap, and immediately were able to restore the limb to its natural shape. Under the application of proper splints and compresses, applied as for fracture of the fore-arm, for the usual time, we always succeeded in preventing all deformity and inconvenience. We mention these circumstances to put practitioners on their guard, as we have seen unpleasant mistakes occur.

XVII.

MR. FERGUSSON ON THE PREPARATION OF SOAP CERATE.*

" As considerable difficulties have

* Dublin Journal of Medical and Chemical Science.

been encountered in the preparation of soap cerate, according to the formula of the London Pharmacopœia, a few observations on their cause, and the best method of making the preparation, may not be considered useless. The Pharmacopœia directs a pound of semi-vitreous oxide of lead to be boiled in a gallon of vinegar, till it incorporates with it, and eight ounces of soap having been dissolved in the solution, the water is to be evaporated slowly, and the residuum formed into a cerate, with oil and wax.

The properties of soap cerate depending entirely on the salt of lead which it contains, it is impracticable to make a useful preparation according to this formula. I have always found, that upon adding the soap to the solution of subacetate of lead, an immediate decomposition of the materials takes place; the potash of the soap, decomposing the metallic salt, combines with its acid, and forms acetate of potash, while the oil unites with the oxide of lead, forming commonly lytharge plaster, which rolls about in a heavy mass in the solution of acetate of potash. Should the evaporation now be continued, the residuum, instead of consisting of subacetate of lead, combined mechanically with soap, will contain only lytharge plaster, acetate of potash, and a little protoxide of lead.

By a slight change in the process, a cerate may be made which will contain the metallic salt undecomposed, and in consequence be possessed of the properties expected to be found in the preparation. Instead of adding the soap to the unevaporated solution of subacetate of lead, it should be boiled down slowly, till it is the consistence of treacle, and in that state be added to the other materials, melted together, and suffered to cool till they begin to grow white; the whole must now be stirred constantly while stiffening, like Turner's cerate, or ointment of the nitrate of mercury.

The quantity of vinegar necessary varies with the proportion of acetic acid it contains, 50 parts of acetic acid requiring 108 of lytharge to saturate them, about 7.28 ounces of pure acid

will be sufficient to decompose 1 pound of lytharge; of purified pyroligneous acid (specific gravity, 1020,) 24.34 ounces contain the requisite quantity, but if common fruit vinegar (specific gravity 1014) is used, a little more than nine pints will be required; vinegar of this strength containing but one-twentieth of its weight of acetic acid. An inconvenience, however, attends the use of pyroligneous acid, as from the quantity of carbon precipitated during the evaporation, the cerate will be of a dark colour."

XVIII.

CASES OF ACUTE AND CHRONIC LARYNGITIS. By M. CRUVEILHIER.*

WE have not hitherto noticed M. Cruveilhier's excellent work so much as its merits demand. Totally differing in plan from the Morbid Anatomy of Bailie, it abounds in cases which may be made available and useful, independently of the plates which the author has subjoined to them. This, however, is in other respects a great disadvantage, as the limits of the work will be extended beyond all moderate bounds. We shall select for a short article some examples of laryngeal inflammation.

M. Cruveilhier divides the diseases of the larynx into those which occur above the glottis, those below it, and those which attack the glottis itself. Of all laryngeal affections, inflammation, as might à priori be conceived, is the most frequent, and, whether acute or chronic it either attacks the cellular tissue external to the mucous membrane, or the mucous membrane itself.

CASE 1. Inflammation of the Cellular Tissue above the Glottis—Œdema of the Glottis.

Pierre Vrain, æt. 56, an old soldier, and addicted to drinking, was seized on the 26th April, 1829, with lassitude,

and next morning complained of sore throat and pains in the limbs, with fever. On the third day the soreness of the throat was great, deglutition and articulation difficult, and the velum palati was seen red and swollen. (*V. S. ad 3x. Garg. Ros. c. Acid Hydrochlor.*) In the evening the breathing was very difficult, sibilous, with threatening of suffocation; the voice only heard at intervals, hoarse, and croupy; the velum more red and swollen, the isthmus appearing almost closed. (*Hirud. xxx. gutt.*) After this the patient experienced great relief, and on the fourth morning the soreness of the throat and dyspnoea were gone. Three white patches were observed on the posterior arch, but the redness and swelling had almost disappeared. In the evening all the bad symptoms returned, and delirium supervened. On the fifth day the breathing was very difficult and noisy, the pulse almost imperceptible; at noon he died.

Sectio Cadaveris. The two folds of mucous membrane forming the sides of the superior orifice of the larynx, that situated posteriorly at the sides, in the neighbouring part of the pharynx, the base of the tongue, on the anterior surface and superior border of the epiglottis, were all of whitish colour, and infiltrated as it were with pus; the two mucous folds already alluded to, especially the left, were enormously swollen, projecting towards each other, so as to be in approximation every where, excepting for a small space behind, where a small aperture only remained for the passage of air. The glottis, and the portion of the larynx below it were more natural. On cutting through the parts affected the pus was found to be diffused in the cells of the cellular texture, and not collected into any distinct abscess. The mucous membrane itself appeared soaked with pus, and its vessels were only detected here and there. Already several sloughs were completely or incompletely detached, and small blood-vessels injected marked their boundaries in a distinct manner. The tonsils were sound, the anterior surface of the epiglottis was covered with sloughs, and its inferior

* Anatomie Pathologique. Cinquième Livraison.

part tumid and enlarged contributed to contract the opening of the glottis. A representation of the larynx of the patient accompanies the case, and displays in a marked manner the almost complete obstruction of the air-passage, by the infiltration of the pus in the loose cellular tissue external to the mucous membrane.

M. Cruveilhier makes some judicious reflections on the foregoing case, which is more important in its character, and more worthy of study in its details, than a superficial reader or practitioner might possibly suspect. It is important, because it is one of a class not very unfrequent, and equalled in insidiousness only by its fatality; it deserves consideration because it displays a common professional mistake, that of considering a patient as out of danger or in little danger, when, in point of fact, his existence is in peril. We have seen several instances of the same description, and we speak from personal experience and observation. But we shall notice an observation or two of M. Cruveilhier's. He looks upon the affection as one of diffuse inflammation of the cellular texture external to the mucous membrane of the larynx. Of this there can be no question. He considers that there exists a great analogy between it and the angina edematosæ. They are similar in their seat, but not altogether in their nature; for in one the cellular membrane is infiltrated with serum, in the other with pus. But on the surface of the body we constantly witness the effusion of serum preceding that of pus or lymph in the subcutaneous and in the inter-muscular cellular membrane, and it is possible that a similar course may be observed in these anginæ. We do not look on the point as determined, for reasons into which we cannot enter at present. If, says our author, a membrane, which is attacked with inflammation is firmly attached on one side and free on the other, the inflammatory effusions are thrown out on its free surface; but if loosely connected to other parts by the cellular tissue, effusions are apt to take place in the latter, and he might have added, to be diffused in it to a great and a fatal extent. Thus

we have seen in examples of fatal cynanche, an effusion of lymph and pus commence in the cellular membrane external to the mucous membrane of the pharynx and larynx, and spread thence between the oesophagus and spine as low as the diaphragm, between the oesophagus and larynx, and between the larynx and its muscles throughout the front of the neck. Those who have bestowed much attention on the affections of the cellular membrane will experience no surprise at this.

With respect to symptoms we can say little more than that they are those of acute cynanche, and that they are often most deceptive. We should say, however, that there is often a degree of anxiety of aspect, and appearance of something wrong, disproportionate to the obvious mischief. M. Cruveilhier insists very properly on careful examination of the throat internally and externally. We should endeavour to obtain a view of the epiglottis if possible, and frequently we may do so by patience and gentleness. Its condition of redness, paleness, or tumefaction is an index of the state of the larynx above the glottis. Dr. Thulier, of Lunoges, has recommended examination of the part by the finger, but, supposing that accurate information were thereby obtained, patients will seldom be found to submit to this manual inspection in this complaint. In chronic diseases of the larynx, M. C. allows, and we agree with him, that this mode of investigation is extremely useful, and we know that it is practicable.

The treatment recommended by M. Cruveilhier is active and judicious:—a copious bleeding in the first instance, leeches, emetics. To this he should have added the inhalation of vapour, and the administration of calomel with active purgatives. But this will not suit all cases, and when the disease attacks the aged or the debilitated, which it too frequently does, the cautious practitioner will hesitate before he employs very violent measures. In such, calomel and opium, with sudorifics, purgatives, leeches and local steaming, must be chiefly relied on.

CASE 2. *Inflammation of the Cellular Membrane of the Larynx below the Glottis—Death from Suffocation.*

A young Swiss was received into the Maison Royale de Santé, under M. Duméril, with pneumonia. He was convalescent from this, when he complained of a violent pain in the region of the larynx, though examination of the fauces, and of the region above and below the os hyoides elicited nothing unnatural. Dyspnœa and great difficulty of articulation soon succeeded, with paroxysms of suffocation in which the voice, respiration, and cough were croupy. He died on the fifth day from the commencement of the symptoms.

Sectio Cadaveris. The larynx, examined from behind, presented a projection at the level of the cricoid cartilage, which when exposed was found denuded, perforated, and reduced to a very thin lamina, surrounded with pus which was contained between it and the thickened mucous membrane. There was no trace of perichondrium. The arytenoid cartilages, surrounded with condensed cellular and mucous membrane, were no longer articulated to the cricoid, disorganized as it was. The laryngeal muscles were all infiltrated, but with what we are not informed. The disorganization of the cricoid cartilage extended to its sides, especially to the left.

M. Cruveilhier observes, that the death of the patient from suffocation is readily explained, by the projection, internally as well as externally, of the thickened mucous membrane and perichondrium detached from the cartilage. M. Cruveilhier also believes that the case was essentially one of inflammation of the cellular membrane external to the mucous. In support of the opinion he cites the following case.

Case. A young man convalescent from typhus, was suddenly seized with hoarseness of the voice, unattended with difficulty of breathing. Eight days after the invasion of the symptoms he died, without any paroxysms of suffocation, and apparently from obstruction of the air-passages. On examination a collection of matter was found in the

substance of the right mucous fold forming the superior aperture of the larynx. The arytenoid cartilage deprived of its perichondrium, was bathed in the pus. M. Cruveilhier also advert's to another case published by M. Bouillaud in the *Journal Complémentaire*, 1825, tome 19.

Case. A man, æt. 22, had been in the Maison de Santé for two months, on account of a putrid fever. Eight days after leaving the establishment, he presented himself at the Cochin Hospital in the following condition. There was extreme hoarseness, which had existed for a month, harsh cough with great soreness of throat, and threatening of suffocation on the slightest exertion. Next evening the restlessness was such that the patient could not remain in his bed, the respirations were deep, prolonged and frequent, accompanied with a rough sound, like that of a base-viol, and the patient was in a paroxysm of terror and suffocation, with a pulse scarcely to be felt. The patient was rather better during the night, but the symptoms returned next day. On the fourth day he had a paroxysm of dyspnea, almost amounting to suffocation, and in the night he died.

Sectio Cadaveris. On the posterior part and sides of the larynx was an abscess capable of containing a filbert. The cricoid cartilage was denuded, as though dissected, and the abscess almost surrounded it. The crico-arytenoid muscles were bare, of greenish colour, and thickened; the nerves could not be traced. The articulations of the arytenoid cartilages with the cricoid were entirely destroyed.

CASE 5. *Chronic Ulceration of the Larynx, and partial destruction of the Epiglottis—Death by Suffocation.*

A man, æt. 40, applied at the Maison Royale de Santé, with all the symptoms of phthisis laryngea; deglutition was extremely difficult, almost always followed by long and severe cough, sometimes even by threatening of suffocation. On examination M. Cruveilhier discovered thickening of the uvula, velum, and soft palate, with ulceration of

the borders and anterior surface of the epiglottis. He had had cough and hoarseness for eight or ten months, but had only ceased to work for fifteen days. He died suddenly.

Sectio Cadaveris. The uvula was furred and thickened; the posterior arch of the palate thickened, also; the epiglottis ulcerated and festooned in appearance at its circumference; the superior orifice of the larynx and the mucous membrane covering its posterior surface, thickened, ulcerated, and granulated. The whole interior of the larynx presented the same thickening and granulated appearance; the base of the right arytenoid cartilage was denuded, ulcerated, and partially ossified. The lymphatic glands at the sides of the larynx were indurated and infiltrated with tuberculous matter. The lungs were closely adherent to the thoracic parietes, and crowded with miliary tubercles; in the summit of the right lung was a large cavity perfectly cicatrized on its internal surface.

M. Cruveilhier observes, that he has witnessed sufficient cases to enable him to pronounce with confidence on the existence of phthisis laryngea, as a distinct disease. It is much more frequent notwithstanding in combination with tubercular disease in the lungs, in fact, we should say, from what we have seen of cadaveric investigations, that a very large proportion of phthisical patients present small laryngeal, or at all events tracheal, ulcerations previous to death. Here we must conclude these cases, and although there is no fact absolutely new to be found amongst them, no doctrine of novel application to be drawn from them, no peculiar or successful plan of treatment advocated or even hinted at, still we think that their importance is sufficient to merit the attention of practical men. The insidious character and too fatal nature of these affections of the larynx cannot be too forcibly, too clearly, or too often pointed out, for many a man has in some degree lost his professional character by attaching too light importance to diseases of this description.

XIX.

MIDDLESEX HOSPITAL.

Mr. LAIDLAW, formerly house-surgeon at this institution, has related the particulars of several cases which occurred in it during his consulship.* We shall select two or three for a brief notice.

CASE I. *Rupture of the Kidney.*

"October 11th, 1829. Alexander Elliot, a remarkably fine healthy young man, twenty-one years of age, while running at full speed, came unexpectedly in contact with the iron palisades of one of the squares, and struck his abdomen against them with such force that he was thrown to the ground by the shock; he immediately got up, and not feeling himself, at the moment, much hurt, walked home, a distance not greater than a hundred yards. Soon after he got home, he became very sick, and vomited, but did not consider it of much consequence, till about two hours afterwards, when, having occasion to make water, he found nothing but blood flowed from the bladder; and he then became alarmed, and procuring a coach, had himself conveyed to the hospital."

At the time of his admission, when I first saw him, he was pale, cold, and covered with a clammy perspiration; his countenance was anxious, and he was greatly agitated. Upon a superficial view, he appeared far more alarmed than injured. He complained of pain in the belly, particularly in the right hypochondriac region; his pulse was full and regular, at seventy-five. At his request some milk and water was given to him; but, immediately upon drinking it, he vomited it up. Twenty leeches were applied to the abdomen without delay.

In the evening the symptoms became more alarming; the vomiting increased, and was accompanied with constant hiccup, which greatly distressed him, the pain in the belly was also

much greater; he rolled about in the bed, was very irritable and restless; the anxiety of countenance was much increased, and the respirations were more frequent than natural: he did not complain when the abdomen was pressed with the hand. As he had not made water since his admission, I introduced a catheter, and drew off about ten ozs. of fluid, apparently chiefly blood, and directed that 15 more leeches should be applied to the belly.

Upon visiting him early the following morning, (Oct. 12th,) he said he was somewhat easier, but had passed a miserable, restless night, and had been greatly distressed by the constant vomiting; his countenance was still very anxious, and he appeared to be suffering a good deal from alarm and agitation. A catheter was introduced, and twelve ounces of bloody urine drawn off: this he said greatly relieved him. Towards night he became much worse; the belly was swollen and tense, and he complained of great pain upon the application of the hand; the vomiting was not abated, and it distressed him much more in consequence of the tenderness of the abdomen. It was found necessary to continue the use of the catheter, and the urine was deeply tinged with blood. Pulse small, sharp and regular, its frequency not increased; tongue natural; skin hot and dry; and he complained of great thirst, which could be only partially allayed by moistening his mouth, as every thing he swallowed was instantly rejected. Rx. Hydrarg. Subm., gr. ij.; Pulv. Opii, gr. ss. statim. Haust. Potassæ Citrat. quartæ quaque hora.

October 13th. Somewhat better; he has had some sleep during the night, and is greatly refreshed; the belly is less painful, and the swelling is diminished; he has passed about a pint of urine without the catheter. As his bowels were confined, he was ordered an enema, and it has produced a copious evacuation, which he says has made him feel much more comfortable. Pulse small, sharp, and much increased in frequency; tongue white and moist. V. S. ad $\frac{3}{4}$ xij. To continue the medicines.

October 14th. He is greatly improved; his skin is cooler, and there is less irritability in the pulse; his bowels have been opened several times, and he passes his water naturally; he suffers very little. The blood drawn yesterday cupped and buffed. Ordered V. S. ad $\frac{3}{4}$ x. Haust. Acetat. Ammon. c. Lig. Antim. Tart. $\frac{3}{4}$ x, quartæ quaque hora.

October 16th. Since the day before yesterday he has been gradually getting better: the pain in the belly is almost gone, and the only thing he now complains of is great thirst and an uncomfortable fulness of the belly. The blood which was taken on the 14th exhibited no inflammatory appearance.

For several days after the last report, every thing appeared to be going on favourably, and he seemed to be getting well rapidly, when suddenly, on the evening of the 21st October, he became much worse; his skin again became hot and dry; his tongue parched and covered with a brown fur; and the anxiety of countenance, which was so apparent at first, had again appeared; he complained of great pain in the right lumbar region; the pulse was full and frequent, but regular. As his bowels had not been opened during the day, an enema was ordered, and he was directed to take the following powder every four hours: Rx. Pulv. Rhei, gr. v.; Hydrarg. c. Cretæ, gr. iij. M. fiat pulv.

On visiting him the following morning, (October 22d,) I found him in less pain than the preceding evening, but the other unfavourable symptoms were unabated. In the course of the day he had a severe shivering fit, which lasted for several minutes, and the pulse became very small and quick. Upon examining the belly, the part originally injured seemed to incline to the side, and appeared to contain fluid. He was directed to continue the medicines, and to have hot fomentations to the belly.

He continued in nearly the same condition during the two following days (October 23d and 24th,) appearing only to get a little weaker; but on the morning of the 26th, it was evident that there was no hope of saving him,

as he was sinking rapidly. He complained of no pain in any part ; he was perfectly sensible and collected, frequently saying that he had made up his mind to die ; his countenance was sallow and very anxious, and he appeared to breathe with great difficulty ; the pulse was too quick to be counted ; the tongue was black and dry, and the skin hot, and without the slightest moisture. He fancied he should like some soda water, and it was accordingly given him, with small quantities of wine occasionally. At seven o'clock in the evening he died, having survived the accident just fourteen days.

The body was examined eighteen hours after death. Upon opening the cavity of the abdomen, the intestines appeared of a dark sooty colour, which was all that was remarkable in them. The whole of the solid viscera were in a healthy condition, with the exception of the right kidney, which, as had been anticipated, was found to be the seat of the mischief ; by the injury it had been broken across just below the pelvis, and in it and the surrounding cellular membrane a large abscess was formed, which contained about three pints of fluid of a light brown colour, this was supposed to be pus, mixed with urine."

This is a very interesting case in several points of view. It displays the series of symptoms which might reasonably be expected to follow a rupture of the kidney, and may afford a hint on the treatment most consistent with facts and principles. The general symptoms, in the first instance, shewed that an important abdominal viscous was injured ; the bloody urine told which that organ was. The earlier symptoms were restlessness, pain, not obviously and decisively increased by pressure on the abdomen, vomiting, hiccup. What did they indicate ? Commencing inflammation of the peritoneum ? No, for the symptoms occasioned by the latter, which, to instance the most analogous case, we see after ruptured liver, intestine, or bladder, differ in many respects from the preceding. They indicated the injection of the cellular membrane around the kidney with blood and urine, and the inflammation thereby in-

duced in it. This inflammation was in some measure checked, but on the 10th day other symptoms were developed ; pain in the lumbar region, anxious countenance, typhoid fever, rigor, the almost unerring indications of the formation of matter. He died, and a venous abscess was found to exist in the cellular texture. Here, then, we see that, in all injuries of parts surrounded by abundant cellular tissue, the great dangers to be apprehended are, the diffuse inflammation and the formation of matter, and that the latter may occur when the patient appears to be doing well, and the incautious practitioner is off his guard. We do not approve of the permission to the patient to drink milk and water immediately after the accident. If there is any one point on which we should be more particular than another, in cases of rupture or injury of the abdominal and pelvic viscera, it is the prohibition of both liquid and solid, food and physic, as far and as long as possible. We have had the treatment of many of these cases, and we were always most successful in proportion as we strictly adhered to this maxim. We always endeavour to make the lancet and leeches supersede all other means for the first two or three days.

CASE 2. *Wound of the Throat, self-inflicted.*

John Row, æt. 30, a tailor, cut his throat with a razor early in the morning of the 5th March, 1829, and was immediately conveyed to the hospital. Mr Laidlaw found him nearly dying from loss of blood. There was an extensive wound, reaching from immediately below the mastoid process, on the left side, to the opposite angle of the jaw.

The left sterno-mastoid muscle was laid completely bare ; the os hyoides and epiglottis were separated by the incision from the cartilages of the larynx, and the pharynx was so completely cut across, that the vertebrae of the neck were exposed, and could be seen through the gaping wound. There was no bleeding from any particular vessel at the time of his admission, but a

general oozing of blood from the wound, which very soon stopped. A ligature was passed through the edges of the incision at both its extremities, and tied, and it was further supported by strapping. No suture could be made in front, as the patient's respiration was greatly impeded upon any attempt to close the wound more completely. The chin was brought to the breast, and there secured by a bandage passed round the head and under the arms, and he was supported in bed by means of a bed-chair. He very soon rallied from the apparently dying condition in which I first saw him, and became calm, and composed, making many attempts to speak, as if desirous of communicating something to us which he considered of importance; these attempts were, of course, unsuccessful. The day after his admission, he signified by signs that he could write on a board any thing he wished to ask us; and, upon being furnished with chalk, he inquired, with great apparent earnestness, if we did not think there was some hope of his ultimate recovery. He also complained of great thirst, which he endeavoured to allay by endeavouring to drink water, but which merely passed from the mouth out again at the wound: he said it afforded him very little relief. I explained to him the necessity of introducing a tube for the purpose of conveying food to the stomach, and he expressed his willingness to submit to it. On the third day an attempt was made to pass the gum elastic oesophageous tube through the mouth into the gullet, but, after several trials, it was found to create so much irritation, accompanied by fits of suffocation, that it was thought most prudent to desist for the present.

He thus continued, without apparently getting either better or worse, for two days longer: the only thing which he complained of was the excessive thirst, which he still attempted to allay by taking water into the mouth, which instantly flowed through the wound. In this way he consumed several gallons of water daily, and, if left for a moment without a supply of it,

he became greatly excited and distressed. On asking him if he suffered from want of food, he wrote on the board that he did not, and that he thought he could do without any for several days longer.

Upon the fifth day after his admission, an attempt was again made to pass a tube into the gullet, which, after a few trials, was attended with success, and a small quantity of beef-tea was thrown into the stomach; it produced a slight degree of nausea, and the tube was withdrawn. In the evening the tube was again passed, and a little more broth was injected. He explained by writing that he did not feel any better for the nourishment he had received, but, on the contrary, rather exhausted. He complained of cold, and requested to have some more bedding, and was very anxious to be allowed to get up, and sit by the fire.

During the night he had a little sleep, and appeared more comfortable than usual; but at an early hour the following morning the nurse found him dying, and before I could be called he had expired.

The body was examined on the following day. Upon examining the wound in the throat, it was found that the main trunks of all the arteries of the neck had escaped injury, but the incision was within a line of the lingual artery and nerve on both sides. The epiglottis was divided transversely, and a portion of it remained attached to the root of the tongue; the pharynx had fallen down or retracted, when divided, so as to be below the incision. The viscera of the thorax were perfectly healthy: in the abdomen, the small intestines were found quite empty, and seemed shrunk; in the lower part of the colon and rectum, a small portion of hardened faeces remained; in the right lobe of the liver, two immense cavities were found filled with fluid, apparently scrofulous matter mixed with bile, and several large hydatids. The largest of these abscesses was situated towards the convex surface of the liver, and was pointing through the diaphragm; it appeared to have been formed by the union of two smaller

ones, as there was the remains of a septum in the centre; the walls were thick, and had a cartilaginous feel. The smaller abscess contained several hydatids of a much larger size than those in the other abscess; there was also a greater proportion of bile. It is singular that disease to such an enormous extent should have existed so long as this necessarily must have done, without it being ever suspected that he had any internal complaint, as his friends assured me was the case. The larger abscess would, no doubt, in a very short period have emptied itself in the cavity of the chest, and he would most probably have died from empyema."

This appears a remarkable instance of the extent to which visceral disease may proceed, without giving rise to actual feelings of illness on the patient's part. We do not think that the secondary effects of suicidal wounds of the throat have received sufficient attention. We possess the particulars of some cases, which we shall probably detail in another part of this Journal.

XX.

THE CYCLOPEDIA OF PRACTICAL MEDICINE. PART III. Price 5s, London, Sherwood and Co.

The late period of publication of this Part of the Cyclopaedia of Medicine will necessarily prevent our taking any thing like a due notice of it. An additional sheet has been added this month, and in future this addition will continue to be made, which we think is highly judicious on the part of the proprietors. As some of our contemporaries remarked, we think that the price was previously too great. We are happy to find, what indeed we entertained no doubt would be the case, that the sale has been such as to offer every encouragement to those engaged in its production. One of the best articles of the present number is that on inflammation of the brain, from the pens

of Drs. Quain and Adair Crawford. It occupies 34 columns, and is very creditable to the research and judgment of those gentlemen. We cannot pretend to present a complete account of the article in question, but we may offer a specimen or two of the manner in which it is executed, and convey some useful information in a few separate quotations.

Whilst the authors communicate all that is certainly known on the diagnostic characters of inflammation of the membranes and substance of the brain, or of *meningitis* and *cerebritis*, they very properly acknowledge that in practice those diagnostic signs are at present too uncertain, to admit of our hazarding positive opinions on such a foundation. The anatomical character of the circulating system of the brain and its membranes makes it probable, that inflammation of the one becomes complicated too soon with inflammation of the other, to allow of very nice discrimination between them. Practically such distinction is rendered comparatively unimportant by the very circumstance or series of circumstances that render it difficult, and it is of greater consequence to determine with accuracy what are the symptoms which indicate inflammation within the cranium, than nicely to mark its exact situation. The following passage by Dr. Quain on the causes of meningitis is worth transcription; after noticing its frequency and insidiousness after injuries of the head, he goes on to remark.

"In the list of causes should also be included depressing passions; sudden fright, or unexpected disappointment; violent emotions; immoderate indulgence of any sort, particularly in the use of spirituous liquors; the suppression of cutaneous eruptions, and habitual evacuations or discharges; insolation (*coup de soleil*) in warm climates; deposition of bone in the dura mater; tubercle developed in the cerebral substance, and extending to the circumference of the hemisphere, so as to become a mechanical irritant to the membranes.

Such are the exciting causes of meningitis; but there are predisposing

circumstances which confessedly render some persons more liable to it than others. One class of persons consists of those who possess what is termed the apoplectic constitution, indicated by a large head, short neck, and sanguineous temperament; the other class exhibits evidences of the lymphatic temperament, together with considerable cerebral development, indicated by precocious talent. Such persons in early life are very liable to attacks of meningitis, which terminate in serous effusion. Sex also seems to be a predisposing cause, or rather the peculiar pursuits and habits of the sexes; for males are more liable than females, according to Martinet, in the proportion of three to one. All ages are liable to this affection, but not equally so; of one hundred and sixteen cases recorded by the author just cited, twenty-nine were under fifteen years, forty-four from fifteen to thirty, thirty-eight from thirty to sixty, and five from sixty to eighty. These results, it should be remembered, are taken from hospital practice, in which the great majority of patients are adults. In private practice the proportion of cases under puberty is much greater than that here stated. The ordinary duration of acute meningitis is from seven to ten days, but death may occur on the third or fourth; few cases are prolonged beyond the twenty-fifth or thirtieth."

Cerebritis. This is divided by Dr. Crawford into general and partial, acute and chronic. Inflammation of the brain sometimes commences suddenly, but usually it is preceded by premonitory symptoms, with which it is highly necessary that the practitioner should be familiar.

"The most usual premonitory symptoms are, a general uneasiness and restlessness, with a tendency to congestion in the head; a sense of weight and fulness; occasional attacks of pain in the head, or of temporary apoplexy or epilepsy; flushing of the face and increased heat of the head; drowsiness and vertigo; preternatural acuteness of the external senses; intolerance of light and optical illusions; contraction

of the pupils, strabismus, or imperfection of sight; tinnitus aurium, or various other noises in the ear; confusion of thought; failure of the memory; mental excitement or depression, or some striking alteration in the habitual character and pursuits of the individual. In some cases there is little appearance of indisposition throughout the day, but the symptoms are aggravated at night; the sleep is uneasy or disturbed by alarming dreams, and in children there is often grinding of the teeth. Pains in the limbs and frequent cramps, general lassitude and muscular debility, are often felt, alternating with fits of shivering and feverishness; the digestive functions are disordered; there is in general loss of appetite; often obstinate vomiting; the bowels are either irritable or torpid, the secretions being always unhealthy.

The above symptoms precede either general or partial inflammation of the brain. Those which follow indicate more especially the invasion of partial and chronic inflammation. A long-continued, fixed, and deep-seated pain in one part of the head; pain, numbness, weakness, a sensation of creeping and tingling in one extremity or in one half the body; or confined to one portion of the extremity: there may be numbness and loss of power in one finger only, or in one set of muscles. Sometimes the speech is affected so as to produce a degree of hesitation, stammering, or indistinctness of pronunciation. Drowsiness, languor, depression of spirits, are observed also more particularly in the chronic form of cerebritis. Some of these premonitory symptoms may have been present for weeks, for months, or even for a year, or for a longer period. The practitioner cannot be too deeply impressed with the importance of the discovery and due appreciation of the foregoing train of symptoms: many of them may be overlooked by the patient, unless his attention be called to them; he attributes his ailments to nervousness, debility, rheumatism, gout, and any but the real cause. He is allowed, perhaps, to live well; his stomach is strengthened and his nerves are soothed; whilst

the disease in the brain, which will certainly end in death, is suffered to pursue its course."

We must pass over a good description of acute and partial cerebritis, contenting ourselves with this short summary of the symptoms of either.

" When the inflammation occupies at the onset a large portion of the brain, we have seen that it is generally complicated with meningitis, and characterized by disturbance in all the vital functions ; that we may recognise in the symptoms a period of high excitement, and one of corresponding depression ; and that it runs its course speedily, either to a favourable or fatal termination.

When, however, a smaller portion of the brain is engaged in inflammation, as in *partial cerebritis*, the course of the disease is seldom so rapid ; its invasion is more gradual, and preceded by symptoms of irritation in some of the organs of voluntary motion, sensation, or intelligence ; and in the more advanced periods of the disease the functions of some of these organs become considerably impaired, or completely abolished."

We think there is much reason in the distinction shewn by Dr. Crawford between the state of brain attending convulsions and that occasioning paralysis. In practice we too often see the distinction overlooked, and convulsions considered as certainly indicative of pressure to some amount on the brain. We remember seeing a patient labouring under erysipelas trephined on account of convulsions. Nothing was discovered. Fortunately the patient recovered.

" The convulsions, paralysis, and other pathognomonic symptoms of cerebral inflammation, may be referred to the more immediate action of three causes :—1st, *inflammation*, affecting either the membranes or a portion of the substance of the brain : 2d, *nervous irritation* extending from the diseased to the healthy parts of the brain, and stimulating its functions : 3d, *pressure*. The difficulty in ascertaining from which of these causes the various symptoms arise, constitutes the chief obstacle

to our always forming an accurate diagnosis in cerebral diseases. Convulsions, spasmodic paralysis, increased activity of the intellectual faculties and external senses, delirium, and all symptoms of excitement, may generally be considered to indicate either commencing inflammation or nervous irritation in the substance of the brain or its membranes. Convulsions may also arise from pressure alone, although paralysis is its most frequent effect ; but the absence of all fever and other symptoms of general irritation, will distinguish these convulsions from those of arachnitis and cerebritis : the same distinction applies to the convulsions of a purely nervous character, observed in hysteria, and after the use of certain poisons, &c.

The effects of pressure have often been examined by experiments on animals. If the cranium of a dog is trepanned and pressure performed on the dura mater to a certain extent, the animal shews signs of great uneasiness, and is affected with general convulsions ; if the pressure is increased, the convulsions cease, the breathing becomes stertorous, the animal torpid and comatose ; if the pressure is diminished, the breathing becomes more free and the convulsions return ; and if it is entirely removed, the animal soon completely recovers. The principal causes of pressure are congestion ; effusion of blood, pus, or serosity into the ventricles, between the membranes, or in the substance of the brain ; organic diseases of the brain or cranium. The obscurity in which all these interesting questions is still involved, is capable, we think, of being considerably lessened by further investigation ; and nothing would

be more likely to contribute to so desirable an end, than pathological observations made with care and impartiality. A valuable collection of cases illustrating the consequence of pressure on the brain, will be found in Dr. Bright's Reports of Medical Cases."

We have a good account of the morbid anatomy of cerebritis ; and Dr. Crawford very properly remonstrates against the too common practice of setting down, as decided inflammation, every appearance of redness and in-

creased vascularity. Under this head, we must content ourselves with a passage on that rare occurrence, ulceration of the brain. We have heard a surgeon, now in the greatest practice in London, declare that he never saw but one instance of it. We have never had an opportunity of observing it.

"Ulceration."—This state of the brain has been described by several writers, although it is uncommon. It has been found on the surface of the convolutions, on the optic thalami, and the corpora striata. The ulcers present an irregular surface, covered partially with either a bloody or albuminous exudation, and having jagged edges. In some cases it is hard and dry; in others, there are fistulous communications between the ulcer and deep-seated collections of pus; and in others the ulcer forms the bed of a coagulum of blood: the ulcers vary in depth and dimensions. Some writers consider these ulcerations as affecting more particularly the arachnoid and pia mater, and not belonging to the cerebral substance. This may be true in some cases, but not in all. Morgagni speaks, in one of his cases, of an erosion of the corpus striatum, and in another of an ulcerous cavity at the base of the left ventricle. Two cases of the same nature are recorded by Scoutetten.

There are also ulcerations occasioned by the penetration of foreign bodies, of which many cases are given by Morgagni and other surgical writers, but these are foreign to our present purpose.

The periods of life most exposed to cerebral inflammation, are old age and childhood.

"The examination of a large number of cases shews that more than two-thirds were persons above forty-five, and a majority of these between fifty-five and seventy. It is a disease, however, which may affect all ages. The frequency of falls and blows on the head in children, the irritation of dentition, the pressure of the head during parturition, predispose them to cerebritis, although there is perhaps a greater tendency at that period of life

to membranous inflammation. Traces of cerebritis have been found in still-born children (?). Men are more subject to cerebritis than women, in the proportion of about two-thirds, owing probably to their being more exposed to the influence of exciting causes. The disease, also, is more common in hot than cold climates, and in Summer than Winter."

Perhaps, it may admit of question, whether cerebritis occurs in the foetus, as here stated. That in still-born children, a condition of brain not perfectly natural may have been observed is very likely, and not difficult of explanation; but that inflammatory action has really occurred, is more than our present imperfect acquaintance with the nature of softening, and some other changes of the cerebral substance, can warrant us in definitely pronouncing. The last consideration that will occupy us, is the treatment of inflammation of the brain. That of the acute form is generally well conducted; but the management of the chronic requires more knowledge, discernment, and discrimination.

"Cerebritis and arachnitis are so formidable, that their prevention is of no less, if not of greater importance, than their treatment. It is extremely important to have recourse to active measures on the very first appearance of any of the premonitory symptoms, however trifling: as we may thus succeed in effectually removing that state of congestion and irritation of the brain, which is the precursor of inflammation. The means of accomplishing this are, the careful and timely removal of all the exciting causes; of every source of irritation, both bodily and mental; regulation of the diet; avoiding alk ex-cesses; relaxation from study, change of air, general and local bloodletting, counter-irritation, with occasional purgatives. Great vigilance is particularly required in the cerebral affections of infants and children, who frequently suffer without complaining. A predisposition to affection of the brain may often be suspected by some slight past or rolling of the eyes; by dilatation of the pupils; or occasional startings, and

attacks of spasmodic croupy breathing during sleep : there may be every other appearance of perfect health with these symptoms, which are often only evanescent ; but they will not escape the attention of the experienced observer, and will be sufficient to put him on his guard."

Dr. Crawford recommends the application of leeches to the anus, or bleeding from the feet or legs, immersed in a hot bath. The daily use of the cold shower-bath is very useful, particularly if the feet are, at the same time, kept immersed in hot water. Dr. Crawford seems to us to speak too lightly of mercury ; he gives it as a purgative only. We have seen too many instances in which its specific action seemed highly beneficial, to look at it in so limited a view as Dr. Crawford. The methodus medendi is judiciously laid down in all other respects by our author ; but we need not pursue the items further. The article is altogether very creditable to its authors, and a favourable sample of the scope and character of the work. We would recommend its able editors to allow sufficient space to the consideration of subjects of practical utility, and to curtail others, which have no such commanding claims on our respect.

I. OPERATION FOR IMPERFORATE VAGINA.*

Dr. STEDMAN, of St. Thomas, West Indies, has related a curious case of this description. The patient was a young negress, 16 years of age. Between the labia there was no fissure whatever, except near the orifice of the urethra, where there was a small round hole, about the size of a large pin's head. There was not the slightest vestige of an opening into the vagina, which appeared to be closed up by a thick, firm substance, covered with skin resembling that of other parts of the body.

The aperture through which the urine passed, being casually enlarged by ulceration, Dr. S. was enabled to introduce a female catheter, which drew off a large quantity of fluid of an urinous smell, mixed with a thin reddish liquid, which appeared, indeed proved, to be the menstrual discharge. The catheter could be depressed nearly in a perpendicular direction behind the septum, closing the vagina, when a larger quantity of menstrual fluid issued. After some accidental complications had been got rid of, Dr. Stedman, with the assistance of several other gentlemen, performed an operation for the girl's relief from her infirmity.

She was placed on a table, in the usual lithotomy position, when Dr. S. having ascertained with the finger per anum, that there was no connexion between the vagina and rectum, introduced with some difficulty a small grooved director, in a perpendicular direction, through the aperture already mentioned. He then made three rapid incisions with a small scalpel through the septum and upon the director, dividing thereby the septum, which was about a quarter of an inch in thickness, and of a membrano-ligamentous structure. The finger was then introduced, and the interior of the vagina found natural in its structure. After the operation, a piece of lint, dipped in olive oil, was introduced between the lips of the wound into the vagina, a compress of lint applied, and all kept in place by a T. bandage. A female catheter was also kept in the urethra. The patient is now perfectly recovered, having a vagina of a natural appearance. Dr. Stedman has no doubt that the closure of the vagina took place when the girl was an infant, and was caused by excoriations and subsequent union between the nymphæ, union which subsequently assumed the firmness and structure described. Some time ago, Dr. S. was called to see a female mulatto, two years of age, in which the nymphæ were beginning to adhere. Medical aid being called in time, the adhesions which extended along the whole orifice of the vagina were slight, and were easily separated

* Edinburgh Journal, No. CX.

by the introduction of a silver probe, to a thin and fetid humour. The disease had commenced twelve years previously at the angle of the jaw, and had increased with unusual rapidity during the last year, when it was attended with much pain. The patient's constitution appeared robust. Dr. Stedman determined to remove the tumour, previously tying the right common carotid artery. The operation was performed on the 7th September in the presence of Baron Von Bretton, M. D. Dr. Hornbeck, and Dr. Ravn, garrison-surgeon, assisted by three persons, to secure the patient. We cannot satisfactorily abridge the record of the operation, or rather operations; shorn of their difficulties in narration, the narrative itself ceases to be instructive.

II. EXTERIPATION OF A TUMOUR IN THE SITUATION OF THE PAROTID GLAND, PRECEDED BY LIGATION OF THE CAROTID ARTERY.

THERE cannot be a more gratifying proof of the progress of knowledge than is exhibited every day by the periodical annals of our own science. Scarce a medical journal sees the light, that does not contain the records of important operations performed by provincial and colonial surgeons. They now vie in zeal, in learning, and in talents, with our metropolitan confrères, and if they have not always the same experience and consequently caution to direct them, it is not their fault, but their misfortune. We have always great pleasure in contributing to disseminate the achievements, for achievements they really are, of our zealous brethren in the country and in our foreign possessions. We therefore more willingly publish the ensuing case.

John Sensire, a free-black, æt. 58, a boat-man, applied to Dr. Stedman in the latter end of August, 1830, on account of a large tumour on the right side of the neck and jaw. It extended from behind the concha of the external ear to an inch below the angle of the jaw-bone; upon the upper part, the tip of the ear, and part of the cartilage of the concha, were imbedded in the tumour, which extended on the forepart from a little below the malar bone to the upper portion of the thyroid cartilage. It dipped under the jaw-bone to the depth of nearly two inches. The greater part was of stony hardness, but two lobes on the top of the tumour were softer, with thin blue skin, which in a few days ulcerated, and gave issue

"The man being laid on his back on a firm cot, and his chin turned to the left side, an incision was made along the internal margin of the *sterno-cleido-mastoideus*, commencing from a point on a line with the middle of the thyroid cartilage, and extending to near the sternal extremity of the clavicle. The fibres of the *platysma myoides* were next cut through, and I proceeded cautiously to dissect through the cellular substance to find the sheath of the artery. This part of the operation was rendered very embarrassing by the quantity of blood, both venous and arterial, that flowed at each touch of the knife, for as fast as it was sponged, the wound was filled up again with blood. As the bleeding continued, notwithstanding five small arteries had been tied, by the advice of Dr. Hornbeck, I enlarged the incision backwards towards the tumour. This was a circumstance of little moment, as this incision would have been necessary, at all events, in the subsequent operation. This gave me more room; and by waiting patiently for a short time, the wound was so far cleared of blood, as to allow me to distinguish the sheath of the carotid artery, with the *descendens noni* on its anterior part. The artery lay very deep, so that after repeated attempts to cut open the sheath, I was obliged to make the man sit up. On turning his chin to the left side, the artery now became much more superficial; and I was easily enabled to

open the sheath, by pinching up a part of it with the forceps, and dividing it, by cutting with the knife laid flat. Having passed the common aneurismal needle, armed with one stout well-waxed silk thread, closely round the artery, and having satisfied the gentlemen in attendance that there was nothing but the artery included, I drew the ligature firmly and strongly. The pulsation immediately ceased in the upper portion of the artery, which I could distinctly feel through its sheath for at least a third of an inch above the place where it was tied. The internal jugular vein gave me not the least embarrassment, nor did I even see it during the operation. The artery was tied at a point about a line opposite to the middle of the thyroid cartilage.

This first operation lasted fifty-five minutes, and would probably have been concluded in half the time, but for the embarrassment caused by the superabundant flow of blood.

The patient was now allowed to rest for a quarter of an hour. A cup of chicken-soup, and a wine-glass of a cordial mixture, composed of tincture of lavender, essence of peppermint, &c. were given him.

The patient being again fixed in a recumbent position, I proceeded to extirpate the tumour.

An incision was made from behind the *concha* of the ear to the termination of the tumour in the neck. I next dissected the skin from the tumour until I had arrived near its base. An oval incision was then made on the front part of the tumour, extending from the front of the ear to the termination of the first incision. I was unable to save so much skin as I had wished, from its being tuberculated, and of a suspicious appearance. The tumour was dissected out cautiously on this side also. Notwithstanding the ligature of the common carotid artery, several arteries sprung in the course of the dissection, so that I had altogether to tie seven in this part of the operation. The tip of the ear, and the cartilage above, were now dissected out of the tumour, which was dissected alternately on each side, until it hung by a portion not thicker

than the middle finger, deep under the angle of the jaw. Upon attempting to cut this, a considerable artery jetted out its blood. Drs. Hornbeck and Ravn having thrown two ligatures round this part, I boldly cut it away, and had the satisfaction to find that no haemorrhage followed. A small lymphatic gland, about the size of a bean, being a little hard, was seized with the hook and extirpated. The whole of the space that had been occupied by the tumour was now carefully searched by the attendant physicians and myself, and no diseased portion could be detected. In the course of the dissection, I was obliged to cut away a part of the head of the sterno-mastoid muscle, as it was impossible to separate them.

The wound that was exhibited after the removal of the tumour, including the one made for tying the carotid artery, extended from the mastoid process of the temporal bone to near the sternal extremity of the clavicle, and from the front part of the ears to deep under the jaw, near the angle of the mouth. The lips of the wound from the sternal extremity, to the angle where the two incisions round the tumour met below the jaw, were brought together by the interrupted suture.

The upper wound, where the tumour was situate, could not be closed by the skin, as a large portion had been cut off for its unsoundness. This space was therefore covered with adhesive strap, and allowed to granulate.

Slips of adhesive plaster were put between the stitches on the wound on the neck, and the whole being covered with a layer of charpie, a loose roller was passed round the neck, and over the top of the head.

The second operation lasted about 48 minutes. The patient did not lose above fifteen ounces of blood; he was not the least exhausted; and at the conclusion of the operation, I found his pulse exactly 96."

The patient bore the operation extremely well. The tumour weighed 1lb. 12 oz.; was ulcerated at the summit, was of scirrhus structure, and one of the lobes at the base contained fetid purulent fluid. We need not pur-

sue the subsequent details. On the 10th the whole of the dressings were removed, and the wound on the neck was found to have healed from the lower part up to the last ligature in the skin. The upper part, where the tumour had been, was much contracted, and the granulations were healthy. The wound was dressed daily, all the ligatures separated, the last, that on the carotid, coming away on the 3d October. On the 6th he was dismissed perfectly cured, with a slight contraction of the mouth to the left side. It is now a year since the performance of the operation, and the man continues in uninterrupted good health.

Dr. Stedman believes, what most men of information believe also, that complete extirpation of the parotid gland is, if not impossible, next to it, and has probably never been accomplished; it certainly was not in the present instance. The operation was a fortunate one, and appears to support the idea that negroes recover with more facility than Europeans from formidable mutilations.

XXII.

CASE OF CHOLERA AT BANBURY.

Lamb's Conduit-st., March 16, 1832.
DEAR SIR,—I consider the case I mentioned this morning and now enclose, of such great importance, in clearly showing that a disease identical with that now prevailing in London, may arise 60 miles or more therefrom, without a shadow of evidence of its having been imported, as will be perceived on perusal of the case admirably drawn up by the surgeon in whose practice it occurred; that I beg you will give it insertion in your valuable Journal.

J. CLARKE,

Dear Sir,—I am happy in having it in my power to give you the information you wish, respecting the case of cholera, being, as you observe, the first person that saw the patient, and, in fact, his nurse for nearly two hours subsequently. I visited him about half-past 12, and

the symptoms being so entirely different from any thing I had before seen, and agreeing so exactly with the descriptions of cholera I immediately suspected this to be a case, and, after giving directions, returned for medicine, and within five minutes the patient was seen by Mr. T. Brayne according to my request. I shall now describe the symptoms from the statement reported to the Banbury Board of Health, by Mr. T. B. who with myself were his principal attendants. We found him in bed, his face had a livid purple hue, particularly *the lips*, his eyes sunk, glassy, and only half covered by the eyelid, and his whole countenance anxious and depressed; he spoke in a peculiar low whisper, and could only say that he felt extremely weak, his face was cold, nose sharp and contracted, tongue white and clammy, felt also cold to the touch; his breathing was quick and laborious, and the exhaled air from the lungs felt cold to the hand when held before his mouth; the surface of the whole body was cold and clammy, but nearly of a natural colour, and the pulse could not be felt at the wrist. He complained most of cramps in his belly, thighs, legs, feet, arms, hands, and back, particularly when he moved, which he did every now and then to make slight efforts to retch, and then fell back exhausted on the bed —also he complained of great oppression at his chest, and pain at the pit of the stomach, which pressure increased. His wife said that he had had at least twenty stools within the last two hours, and that they now ran from him involuntary; they resembled rice gruel, or something white—had been poured into water—slightly tinged with blood, and subsided in a flocculent form at the bottom of the vessel. He had passed no urine since the morning; something warm had been given and immediately rejected. Three tea-spoonfuls of mustard in half a pint of water were immediately given him, and after the second half of this he vomited copiously and violently. Tin cases and bottles of hot water were applied to as much of the surface as possible, with the addition of more clothes;—after the vomiting from the emetic had subsided, 60 drops of tr. opii in a glass of strong hot brandy

and water were next given, and part was rejected—the temperature and colour of his face somewhat improved. In the course of two hours he took nearly a pint of brandy with hot water, and two more doses of laudanum; and by the end of that time considerable improvement had taken place in the warmth of surface; the pulse now began to be perceptible, and the cramps and breathing were better. Two grains of calomel with one-third of a grain of opium were given every hour till 7, p.m. at which time he was rather hot, except the feet; face changed from purple to red, pulse 120 and full, and the cramps, the legs excepted, much abated; in short, re-action had taken place. Nine, p.m. Improving, has passed three stools, mouth very clammy; *thirst, and a wish for cold drink, which he did throughout;* speech still low—effervescent saline med. with an excess of alkali; test. pp. and minute doses of opium every three hours; diluent drinks, and discontinuance of all stimulants.

March 9th.

Has had a little sleep, been warm and perspiring through the night—pulse full, countenance natural, has had three slimy stools, *no urine* has been made since the attack, and *there is none in the bladder*. Six, p.m. A comfortable day—two stools, has passed a little urine. Sunday evening, going on well, diarrhoea ceased; no stool since Friday, cramps gone, pulse 88, skin moist, urine in sufficient quantity, complains of weakness, every thing promises certain and speedy recovery. Having related the symptoms, I shall now describe his character. His name is J. Turbitt, aet. 29, works for the Commissioners of Roads, in sweeping, cleansing, &c.—has eaten nothing particularly offensive of late; was employed cleansing a sewer Monday and Tuesday, both very wet days, when he got wet through, and rather inebriated in the evening—rather addicted to drinking, and night-poaching for fish. He had three stools on the Wednesday, and some time since diarrhoea. He got up well on the morning of his attack, (Thursday); soon after six came home to breakfast between eight and nine, and went to work again till half-past ten, when he returned, complaining of having been *very sick*,

with a purging. These symptoms, with *cramps and coldness,* continued rapidly increasing till noon, when he applied for advice. In November three of his children had typhus fever, the youngest died; the leading symptoms were excessive diarrhoea. Neither he nor his wife were ill. Two other children, living in the same yard, about the same time, had fever; these being the only cases in that part of the town, it being very prevalent elsewhere. We have had no case of fever now for several weeks. The yard he lives in is very dirty and confined, his house *comfortless*, and he had great deficiency in *bedding, clothes, &c.*

We have, unfortunately, lost the name of the writer, while transcribing the case from the letter to Mr. Clarke.

—*Ed.*

XXIII.

Dr. YATES' LETTER.

SIR,—I take the liberty of troubling you with a communication which I have received from Vienna on the subject of the Cholera, which may perhaps be worth your reading, as it contains the opinions of two gentlemen who have had considerable experience during the prevalence of the late epidemic, at the Austrian capital. I showed the original to Dr. Babington of the City, who, I believe, is one of the Board of Health. He considered the paper of sufficient importance to be worthy of a place in the CHOLERA GAZETTE, and, accordingly, introduced me to Dr. Russell, who expressed himself desirous of having it;—he said indeed he should be “personally obliged to me for it, and that the Board would also be grateful.” I was thus induced to translate it; but, on calling afterwards on Dr. Russell, I was surprised to find that he objected to give the paper a place in the Gazette, saying that “as the author set out upon the principle that the disease is *not contagious*, it would be quite contrary to the views of the Government, or indeed of the gazette itself, and entirely counteract their designs. I told him I was not aware that they had any par-

ticular motive in view, or that they wished to consider one side of the question more than the other; but that (supposing truth to be the object) they would be happy to receive any information which was founded on *experience*, and likely to benefit mankind.

W. HOLT YATES, M.D.*

XXIV.

REMEDY FOR OPHTHALMIA DISCOVERED BY DR. SEEDS, R.N.

THIS old and zealous physician, whilst labouring under an obstinate attack of ophthalmia, determined to try the effect of an external application. It removed the inflammation in his eye with great rapidity, and believing that what was of service to himself, would also prove serviceable to others under similar circumstances, he determined to publish the formula of his preparation. Mr. Guthrie, with his usual affability and good feeling, allowed Dr. Seeds to try the effects of the application at the Ophthalmic Infirmary in Chandos Street. The results we believe were satisfactory. The following is the formula, with the mode of using it.

R. Sp. aeth. sulph. c. 3*i.*

Sp. ammon. comp. 3*i.*

Sp. vini camph. 3*i.* M.

This lotion is applied over the eyelids, forehead, and temples, in acute and chronic ophthalmia; and also introduced into the nostril with the point of the finger.

We hope that Dr. Seeds will be gratified by the success of his remedy, as we have reason to believe that it has been already very great.

XXV.

DR. CLARKE'S ALGID FEVER OF SMYRNA, COMPARED WITH DR. BARRY'S BLUE CHOLERA.

SIR,—In the October Number (1826) of the Medico-Chirurgical Review, there is published a paper written by Dr. Clarke,

descriptive of a strange disease that was epidemic at Smyrna, in 1825-6, and which bears so striking a likeness to the worst cases of blue cholera, that the following passage may be worth transcribing at the present moment.

"There is no shivering, nor is the slightest sensation of cold complained of. The pulse, if felt at all, is thready and rapid, disappearing under the slightest pressure of the finger. There is, more usually, a total want of pulsation in all tangible vessels, and even in the region of the heart. The countenance, in some cases, is livid, and betrays unspeakable anguish. The features are withered and shrunk. The intellectual powers are, for the most part, but little impaired; and there is frequently a command of muscular exertion, a calm composure and self-possession which would lead any one, unacquainted with the patient's situation, to believe him free from complaint. But when the fingers are applied to the wrist, and the pulse is sought in vain—when the more than deadly coldness of the surface is perceived, the illusion vanishes. In this state of equivocal existence, he continues from ten to eighteen or twenty-four hours, and, in some cases, much longer, when, if he survives the paroxysm by the persevering application of remedies, and the re-active energies of the system, an increase of temperature takes place, which gradually acquires different degrees of intensity, and occasionally requires to be moderated."—*MEDICUS.*

The above description is so perfectly identical with some of the very worst forms of the present epidemic, that we think it is well worthy of a place here.

XXVI.

DR. O'HALLORAN ON THE EPIDEMIC CHOLERA.

My DEAR SIR—I visited the cholera hospital at Southwark, and I do not hesitate in giving it as my opinion, that the disease which prevails in that quarter is not cholera. I am induced to form this conclusion from its identity with many of the cases of epidemic fever which I

* We regret that we cannot in this number find room for the German Paper. It will certainly appear in our next. *Ed.*

have seen in the different towns of the Mediterranean and West Indies, where the character of the common endemic of the country is remarkably changed by the operation of an epidemic cause, and where the same exhaustion—the same sinking of the pulse—the same shrinking of the features—the sinking of the eyes—the deadly coldness of the extremities—the malignant aspect—the insatiable thirst—the vomiting, retching, griping and spasms—the pain in the hypochondria and calves of the legs—the continual drowsiness, restlessness, with the peculiarities of the tongue, voice, and urinary organs, were remarkable amongst the poor in the ill-ventilated houses in filthy lanes and alleys.

Moreover, the cholera of the East is seldom preceded by diarrhoea—in the epidemic of London, neglected diarrhoeas drain the system, in a great measure of its blood, and the frightful termination, misnamed cholera, is the effect of the absence of the vital fluid. In the malignant epidemic diarrhoea of London, where reaction and excitement are produced by the prompt application of remedies, the character changes, and the disease assumes the typhoid type—conversions unusual in the cholera of the East:

The cholera of the East strikes suddenly; and the termination in recovery or death takes place within a short period—in the epidemic in London, the period is protracted to an indefinite time.

In the East, whole communities are sometimes seized suddenly by epidemic cholera—in London the epidemic chiefly confines itself to the wretched inhabitants of filthy streets and ill-ventilated houses.

Much importance seems to be attached to the state of the urinary bladder after death, considered by some as diagnostic of cholera; but, such is its condition generally, in all malignant fevers; for, as the urinary secretion is suspended, the organ contracts so as to be incapable of containing an ounce of fluid; and this, not the effect of the spasms and cramps, as they will have it, accounts for the diminution of the organ, as the deficiency of glandulous secretions about the mouth and neck,

together with the collapsed state of the lungs, explains the peculiarity in the voice and its occasional loss.

A similar degree of consequence is attached to the absence of the pulse, and to the appearance of the extremities before death. There is nothing unusual in the appearance so much insisted on as peculiar to this disease, for we find, in all malignant congestive fevers of tropical climates, that as soon as the circulation deserts the surface and extremities, the latter turn blue; and cases are on record, where the feet assumed the appearance of putrefaction before life was extinct—a condition which I witnessed in the hospital at Xeriz, in the epidemic of 1820.

The only peculiarity which I witnessed in this disease, consisted in the nature of the stools; but as the intestines are cleared of the morbid contents in the early stage, it is not to be wondered at that the evacuations should resemble and consist of, in a great measure, the fluid taken into the stomach after secretion and absorption are at an end. T. O'HALLORAN, M.D.
London, 17th March, 1832.

We have received a pamphlet from the pen of Dr. Reich, of Berlin, detailing most extraordinary success in the treatment of the late epidemic in that capital. We have no room for details. He considers the poison which produces the disease called cholera to be one generated in the stomach and bowels, not received *ab externo*. His plan of treatment was this. Dissolve ten grs. of emetic tartar in seven ozs. of water, and give half an ounce every two hours, continuing the medicine, even after the evacuations have ceased, till appetite and natural faeces are restored. The first effects are, more copious purging than vomiting; but these soon cease, tolerance of medicine being, in a short time, established. He allows the patient plenty of cold drink—prohibits all heat and frictions—gives no other internal remedy—and states that, by the above measure, he cured 119 out of 123 patients.

Considering the fatality of the disease in its asphyxial stage, we seriously recommend a trial of the plan.

APPENDIX.

REPORT OF THE MADRAS MEDICAL BOARD ON EPIDEMIC CHOLERA.

(Continued from Page 512.)

THE term asphyxia appears to have also occurred to Mr. Cruickshank, in 1814, as applicable to the disease since known as the spasmodic or epidemic cholera, though he did not propose to use it as an adjunctive, or specific term for cholera, but in a generic sense. The coincidence is still felt, however, to be confirmatory of the propriety of the appellation of cholera asphyxia, which was adopted in this report, long prior to the receipt of his communication bearing date the 24th July, 1823.

In the following remarks, accordingly, the term cholera biliosa will be used in speaking of the common form of the disease, or cholera mórbus; and cholera asphyxia, or simply cholera, in speaking of that epidemic which forms the immediate subject of this report.

[*Description of Cholera.*] The symptoms of cholera asphyxia can hardly be better detailed than they are by several of the older authorities, whose descriptions of the disease have been quoted; or, than in many of the original papers which constitute the chief value of this work. The descriptions given in Mr. Jameson's, and Mr. Orton's publications are likewise of the highest value, and little more is left to be desired on that head than a few brief and supplementary observations.

This most formidable disease does not appear to be attended by any premonitory symptoms which can be regarded as being at all peculiar to it; on the contrary, we may safely assert, that it is of sudden invasion: for, though a slight nausea, a laxity of the bowels, and a general feeling of indisposition are often found to precede cholera, yet these symptoms are evidently common to many acute diseases; and they are especially frequent in this climate without being followed by any graver ailment. When such symptoms are found to precede cholera, they might with more truth be regarded as indicating merely a certain deranged state of the alimentary organs, a condition of the body which certainly predisposes a person to an attack of cholera.

The invasion of cholera generally takes place in the night; or towards morning. The patient is sick at stomach, he vomits its contents, and his bowels are at the same time evacuated. This evacuation is of a nature quite peculiar to the disease; the entire intestinal tube seems to be at once emptied of its fecal or solid matters; and an indescribable, but most subduing feeling of exhaustion, sinking, and emptiness is produced. Faintness supervenes, the skin becomes cold, and there is frequently giddiness, and ringing in the ears. The powers of locomotion are generally soon arrested; spasmodic contractions, or twitchings of the muscles of the fingers and toes are felt; and these affections gradually extend along the limbs, to the trunk of the body. They partake both of the clonic and tonic spasm, but the clonic form chiefly prevails. The pulse, from the first, is small, weak, and accelerated; and, after a certain interval, but especially on the accession of spasms, or of severe vomiting, it sinks suddenly, so as to be speedily lost in all the external parts. The skin, which, from the commencement of the disease, is below the natural temperature, becomes colder and colder. It is very rarely dry; generally covered with a profuse cold sweat, or with a clammy moisture. In Europeans, it often partially assumes a livid hue; the whole surface appears collapsed, the lips become blue, the nails present a similar tint; and the skin of the feet and hands becomes much corrugated, and exhibits a sodden appearance. In this state, the skin is insensible, even to the action of chemical agents; yet the patient generally complains of oppressive heat on the surface, and wishes to throw off the bed-clothes. The eyes sink in their orbits, which are surrounded by a livid circle: the cornea become flaccid, the conjunctiva is frequently suffused with blood: the features of the face collapse; and the whole countenance assumes a cadaverous aspect, strikingly characteristic of the disease. There is, almost always, urgent thirst and desire for cold drinks, although the mouth be not usually parched. The tongue is moist, whitish, and cold. A distressing sense of pain and of burning heat at the epigastrium are common. Little or no urine, bile, or saliva, is secreted. The voice becomes feeble, hollow, and unnatural. The respiration is oppressed, generally slow; and the breath is deficient in heat.

During the progress of these symptoms, the alimentary canal is very variously af-

fected. After the first discharges by vomiting and purging, however severe these symptoms may be, the matter evacuated is always watery, and in a great proportion of cases, it is colourless, inodorous, and often homogeneous. In some, it is turbid, resembling muddy water; in others, it is of a yellowish or greenish hue. A very common appearance is that, which has been emphatically called the "conjee stools," an appearance produced by numerous mucous flakes floating in the watery or serous part of the evacuation. The discharges from the stomach, and those from the bowels, do not appear to differ, except in the former being mixed with the *ingesta*. Neither the vomiting nor the purging are symptoms of long continuance. They are either obviated by art, or the body becomes unable to perform these violent actions; and they, together with the spasms, generally disappear a considerable time before death. If blood be drawn, it is always dark, or almost black, very thick, ropy and generally of slow and difficult effusion. Towards the close of the attack, jactation comes on, with evident internal anxiety and distress: and death takes place, often in ten or twelve, generally within eighteen or twenty, hours from the commencement of the attack.

During all this mortal struggle and commotion in the body, the mind remains clear, and its functions undisturbed almost to the last moment of existence. The patient, though sunk and overwhelmed, listless, averse to speak, and impatient of disturbance, still retains the power of thinking, and of expressing his thoughts, as long as his organs are obedient to his will. Such is the most ordinary course of cholera asphyxia, when its tendency to death is not checked by art.

A favourable issue is denoted, by a rising of the pulse, a return of heat to the surface, inclination to natural sleep, and a diminution, or cessation of vomiting, purging, and spasms; these indications being succeeded, after an interval, by the re-appearance of faecal matter in the stools, of bile, of urine, and of saliva.

[*Varieties in the general Features of Cholera.*] Cholera, like other diseases, has presented considerable variety of symptoms; but, before we proceed to notice its more striking varieties, it is necessary to advert to one feature, which, though not altogether unobserved in other epidemics, may still perhaps be regarded as especially distinguishing cholera; namely, that these varieties are not observable so much in *individual* cases, as, in what may be termed, *local epidemic visitations*. Thus, when the disease appears epidemically in a town, or district, or in the lines of a corps, or the camp of a marching regiment, it may on one occasion be distinguished, throughout, by the absence of vomiting, and the prevalence of purging; on another, by the excess of vomiting, and, though more rarely, by the absence of purging. Spasm may be generally present in one instance of invasion; in another it may not be distinguishable. A frequent variety, the worst of all, is that which is noted for the very slight commotion in the system; in which there is no vomiting; hardly any purging; perhaps only one or two loose stools; no perceptible spasm; no pain of any kind; a mortal coldness, with arrest of the circulation comes on from the beginning, and the patient dies without a struggle. This has frequently manifested itself as the prevailing type; and almost all die who are attacked by it: but fortunately it has not usually lasted long; the disease either disappearing, or assuming during its further progress, a milder or less formidable character.

It would be highly important in a pathological view, could we trace these leading distinctions in the disease, to any particular state of the weather, to any local peculiarity, or to any circumstance affecting the food, shelter, or occupation of the people, who may be the subjects of it; but it must be confessed, that this is far from being practicable. It appears, on the contrary to be established, that under circumstances apparently similar in all respects, these modifications of the disease have been found equally to prevail. On the other hand, it may be assumed, that a person, in proportion to the vigour of his constitution and to the unimpaired state of his health, is less liable to be affected with the low form of the disease.

[*Vomiting.*] Vomiting is a prominent symptom of cholera: but there are numerous instances on record where it has been entirely absent. In certain epidemic visitations even, scarcely an individual case has manifested this symptom. In some cases the stomach appears to be freely and perfectly emptied; prodigious quantities of watery fluid being ejected, occasionally with great force. This fluid sometimes resembles what is discharged in pyrosis; at other times it is glairy and ropy. In other cases, the stomach seems to have lost the power of freely ejecting its contents: there is an ineffectual

straining to vomit, and a spouting up of any fluid which is swallowed, as if by an effort of the lower part of the oesophagus, rather than of the stomach itself. When full vomiting in these cases has been effected by medicine, relief follows; not, however, in all probability, by the mere evacuation of the gastric contents, but as a consequence of that change in the condition of the patient, which must necessarily be established before the stomach can resume the action of vomiting. Vomiting is sometimes altogether absent; or, if it has been present, soon ceases, from an atonic state of the stomach, under which that organ receives and retains whatever may be poured into it, as if it were really a dead substance. This is a most alarming state, in comparison with which, the utmost irritability, or almost any other imaginable condition of the part, may be held to be of little danger.

It is not always easy or possible to ascertain what substance imparts the greenish or yellowish hues to the fluids ejected by vomiting: but it is perhaps too readily admitted, that these colours are owing to the admixture of bile. A regular series of experiments, regarding the effects of chemical agents on the gastric and intestinal secretions, and on the matters discharged in cholera, and in other diseases, is certainly a desideratum. The Medical Board have addressed a circular letter to several of their officers on this subject, which it is hoped will ultimately be the means of drawing forth some precise information.*

Supposing, however, that either the yellow or green hue of the matter vomited in cholera, indicates the presence of bile, it is undoubtedly of rare occurrence, especially during the acute stage of the disease. It would appear, nevertheless, that apparently biliary matters have been vomited, particularly at the beginning, and towards the favorable termination of the disease, and even in cases, which have ended fatally. The mere presence of bile in the discharges cannot, therefore, be held as decisive against the disease being the cholera, of which we are treating. Worms, especially the *lumbricus teres*, have been very generally ejected by vomiting: and several medical officers have noticed, that this symptom has even indicated a less dangerous form of the disease. If there be any truth in the observation, it is probably referrible to the *free* action of vomiting, which brings up these animals; this being in itself a favourable symptom.

[*Purging*] Purging is a more constant symptom of cholera than vomiting: and in a majority of cases, it is the first in the order of occurrence; but, being a less striking deviation from a state of health than vomiting, which instantly arrests the attention, it has usually been treated of in succession to it. This symptom has very rarely been altogether absent: but there seems no reason to doubt, that this is sometimes the case. Its absence appears indeed to denote a peculiar degree of malignancy in the attack. The accounts given by the patients, however, in respect to their alvine evacuations, are not to be im-

* On mixing 20 grains of calomel with an ounce of ox bile, which was previously of a "grass green colour," the bile assumed the hue of "pea green." This hue was rendered more intense by the application of heat, and took on a tinge of yellow. After standing 24 hours, the mixture was of "a dark or sap green." The calomel appeared at the bottom like "blue ointment" and was "unctuous" to the feel. On mixing 40 grains of calomel with an ounce of ox bile, previously of a "light brown colour with a shade of green," the mixture assumed the colour of "ochre." After standing it assumed a "grass green colour." The calomel was discoloured in a less degree than in the former experiment. On mixing 15 grains of calomel with 6 drachms of sheep's bile, which was of a "dark brown colour with a shade of green," the mixture put on a "light pea green with a tinge of yellow." On subsidence of the calomel, which was apparently unchanged, the bile appeared of a "rich dark green colour." On mixing 40 grains calomel with two drachms of goat's bile, which was of a "dark green colour," no change of colour took place.

On mixing 4 drachms of ox bile of a "light brown colour," with an equal quantity of liquor ammoniae, the mixture assumed the colour of madeira wine. Equal parts of sheep's bile and liquor ammoniae being mixed, the fluid became of a light yellow colour. The bile was previously of a deep yellow.

On mixing equal parts of sulphuric æther and ox bile, which was previously of a "pea green colour," the fluids did not unite. The æther got a "yellow tint: and the bile became of a yellowish hue."

These observations have been kindly communicated by Mr. M'Farland, Assist. Surg.

citly believed. Their attention is not always drawn to the nature of the discharge: and they are apt to convey very erroneous notions on the subject to the medical attendant. In cases, where little or no purging has taken place during life, the intestines have yet been found, after death, to be filled with the congee like matter, as if they had wanted energy to throw it off, or, as if a stricture had been formed on the lower portions of the gut. The intestinal canal appears to be subject indeed to the same influences, and its contents appear to vary, as has been stated to be the case with the stomach, with this exception, that it seems always to have the power of emptying itself of its *natural* contents at the commencement, or during the progress of the disorder. This inference is drawn from the accounts of dissections; for we find no instance recorded of faeces remaining, unless in very protracted cases, when the primary disease has been overcome. The dejections are sometimes made without effort or uneasiness; at others, they are thrown out with great force, which has been compared to the squirt of a syringe. They also sometimes take place simultaneously, with vomiting, spasm, and stoppage of the pulse, as if all these affections originated, at the instant, from one common cause. There is seldom much griping or tenesmus, although the calls are very sudden, and are irresistible. Pain on pressure of the abdomen is only occasionally noticed. In advanced stages of the disease, purging generally ceases: but in many cases, a flow of watery fluid from the rectum, takes place on any change of position. The matters evacuated, after the first emptying of the bowels, have been occasionally observed to be greenish, or yellowish, turbid, of a frothy appearance like yeast, and sometimes bloody. In some cases they are inodorous, in others they have a rank fleshy smell. In one fatal case, pure bile, it is said, was discharged. Perhaps much of this variety may depend on the previous state of the large intestine, especially in Europeans, who so generally labour under a morbid condition of that organ: but, by far the most common appearance is that of pure serum, so thin and colourless as not to leave a stain on the patient's linen. The next in order of frequency is the congee like fluid; the mucus is at times so thoroughly mixed, however, with serum, as to give the whole the appearance of milk or chyle. The evacuations have also been observed to resemble soogee in colour and consistence: and these cases were mild. Worms are very commonly discharged by stool. The reappearance of faecal matter, especially if tinged with bile, seldom, perhaps never, takes place till the disease has been subdued. The quantity of the clear watery fluid, which is sometimes discharged, is exceedingly great; and, were it uniform, it might afford us an easy solution of the debility, thirst, thickness of the blood, and other symptoms: but it is unquestionable, that the most fatal and rapid cases are by no means those, which are distinguished by excessive discharges. *We have innumerable instances, on the contrary, of death ensuing after one or two watery stools, without the development of any other symptom affecting the natural functions. Even collapse has come on, before any evacuation by stool had taken place.**

[*Of the Animal Functions.*] Though the animal functions necessarily partake of that disorder of the vital and natural functions, which very strikingly characterises cholera, yet this participation is not so immediate as we might, a priori, be led to expect.

The undisturbed state of the mind has been the subject of general remark: but it cannot be matter of surprise, should some exceptions occur, from a fortuitous morbid affection of the brain following a state of sanguineous congestion. There is reason to believe, that the simple congestion observed in cholera has not been the cause of the coma, or insensibility, which have been remarked: and, when we recollect, that almost all practitioners advert to the great reluctance of the patient to be aroused, we must admit, that cases of imputed coma may have often been referrible to this condition, which have yet been reported as arising from physical disability. Instances are not wanting of patients being able to walk, and to perform many of their usual avocations, even after the circulation has been so much arrested, that the pulse has not been discernible at the wrist. Much seems to depend on the constitutional strength, and firmness of mind in the patient, and on the form, in which the disease has made its attack. The cases here alluded to are those chiefly, in which it has begun by an insidious watery purging; and many lives have been lost in consequence of the patients, under these fallacious appearances, not taking timely alarm, and applying for aid. In other cases again, the animal functions appear to have been early impaired, and the prostration of strength to have preceded most of the other symptoms.

* See Dr. Clarke's Description of the Smyrna Disease.—ED.

[*Spasm.*] Spasm has been held to be so essential a feature of that species of cholera, of which we are treating, as to confer on it a specific name. In so far, however, as relates to the muscles of voluntary motion, and it is that description of spasm only, which we mean here to treat, no symptom is more frequently wanting. Spasms of the muscles chiefly accompany those cases, in which there is a sensible and violent commotion in the system. Hence they are more frequently found in European than in native patients; and in the robust of either, than in the weakly. In the low, and most dangerous, form of cholera, whether in European or native cases, spasm is generally wanting, or is present in a very slight degree. The muscles most commonly affected are those of the toes and feet, and calves of the leg; next to them, the corresponding muscles of the superior extremities; then those of the thighs and arms; and, lastly, those of the trunk, producing various distressing sensations to the patient. Amongst these, hiccup is not unfrequent, but it has been observed that this symptom, in cholera, is not at all indicative of danger. The muscles of the eye-balls have not been observed, to be affected with spasm, unless the sinking of these organs in their orbits may be considered to be an effect of it. The reports make frequent mention of a remarkable, permanent contraction of the muscles of the abdomen, by which the belly is drawn towards the spine. The spasms attending cholera are of a mixed nature, not strictly clonic; the relaxations being less prompt and frequent than in epilepsy or convulsion; and seldom durable as in tetanus. The contractions of the muscles are invariably attended with pain, and some Medical Officers have observed, that a degree of spasmatic stiffness has continued for several days afterwards. It has also been remarked that spasmatic twichings of the muscles have taken place after death, and have continued for a considerable time. In one case where a man had been paralytic in his limbs, with a total numbness of them, they were severely affected with spasms, and became exquisitely sensible. It is pretty evident, that there either has been an inaccuracy in the description of spasm occurring in cases of cholera, or a sensation differing from that of spasm has been confounded with it; for, by the descriptions, we would be led to suppose that the spasms begin, and are felt, in the toes and fingers, which cannot be the case. As the extreme muscles however are generally first seized with spasm it is probable that the small fleshy bundles in the palms of the hands, and soles of the feet are affected; but there seems reason farther to conclude, that pain is really felt in the fingers and toes, and that it is referrible to a sort of nervous twinge or tic doloureux in these parts, distinct from spasm, which is not uncommon in other disordered states of the digestive organs.

[*Collapse.*] Of all the symptoms of cholera, none is so invariably present, none indeed so truly essential and diagnostic, as the immediate sinking of the circulation. It must nevertheless be admitted, that, where instant remedial measures have been successfully practised, this symptom may not have developed itself; and that there are even cases, where an excited vascular action has been observed to accompany the first movements of the system in cholera. Some intelligent practitioners have entertained doubts whether such cases belong indeed to this disease; and there seems reason to imagine that those inflammatory affections with spasm, known in this country, and alluded to in several reports, may, in some instances, have been mistaken for it. It is farther to be remembered that these are precisely the cases, which yield most certainly and readily to our remedial means: and it consequently follows, that a medical man can seldom have the opportunity of observing, whether or not, this form of cholera will degenerate into the low stage. There is, however, direct evidence in support of the fact, that they have so degenerated, and gone on to a fatal termination. In the case of soldiers too, in whom such symptoms have chiefly appeared, we must make some account of the quantity of spirits usually drank by them at the commencement of the disease, producing an effect on the circulation. The period, at which a marked diminution of vascular action takes place, is somewhat various. The pulse sometimes keeps up tolerably for several hours, though very rarely. It more generally becomes small and accelerated at an early stage; and, on the accession of spasm, or vomiting, suddenly ceases to be distinguishable in the extremities. The length of time, during which a patient will sometimes live in a pulseless state is extraordinary. Dr. Kellett relates a case, where the pulse was gone within three hours from the attack; yet the man lived in that state, from the 3d October at 4, P.M., to the 6th at 2, P.M. On the cessation of the spasms or vomiting, and sometimes, apparently, from the exhibition of remedies, the pulse will return to the extremities for a short time, and again it will cease. The

superficial veins and arteries are not always collapsed, even when the pulse has ceased. If these vessels be opened in this condition, the contained blood flows out; their walls then collapse, and no more blood can be extracted. There is no authenticated fatal instance of cholera on record, where the circulation has not been arrested, in the extremities at least, long before death took place. The only apparent exception to this conclusion would not have been deemed deserving of particular attention, were it not, that in the faithfulness of record, which it is hoped distinguishes this report, nothing, purporting to be a medical fact or observation, is omitted. The case is this. "Scarcely any disease occurred on the march, with the exception of a few cases of cholera; of these, a havildar and sepoy died, and several followers, who seldom were reported in time to receive any aid. One of the last class, a fine stout young man, a bullock-driver, was brought to the hospital almost in the last agony; I mention this case from the peculiarity of the patient's skin being hot and dry, and his pulse being about 120, full and strong, until the last moment, circumstances I had never seen before; while from the peculiar appearance of the eyes, and the collapsed features, together with the description given of the attack, and progress of the disease left me no room to doubt its being genuine. 1st July, 1821." The writer of the preceding extract notices the case for its singularity; and, in judging of its identity with cholera asphyxia, we must allow due weight to the circumstance of his attention being thus excited. He acknowledges, however, that the patient was brought to him in the last agony, and draws his conclusions from the reports of the manner of attack and progress of the disease, and from the appearance of the features of the face. We are left to conjecture as to the former of his grounds of belief; and shall, therefore, only hint at the possibility of coup de soleil having been mistaken, *on description*, for cholera: but the sudden collapse of the countenance, which takes place in cholera, seems hardly reconcileable with any condition of body, in which the skin is dry and warm, and the *pulse full and strong!* That peculiar state of countenance is manifestly the result of the retrocession of the blood from the surface; and it is quite distinct from the wasting of the solid parts from disease, or inanition. That a case of cholera may terminate in death, and the pulse remain *at 120, full and strong*, to the last moment, is not physically impossible, although at present standing single on the records: but, when supported by hearsay evidence, and by an observation, which, it has been attempted to shew, is not tenable, we may be allowed to regard it as one of those *facts* alluded to in the beginning; and, being palpably at variance with general experience, it is to be weighed with much caution and circumspection, if not totally rejected.

[*Thirst and sense of heat in the epigastrium.*] Thirst, and a sense of heat, or burning, in the region of the stomach, are generally connected together, and form very prominent and constant symptoms of cholera: yet, not only in individuals, but even in epidemic invasions, these symptoms have often been altogether wanting. Even when they are present in the highest degree, the mouth is not often parched, nor the tongue often dry; on the contrary, there seems in general no want of moisture; and while, as Mr. Jameson observes, "all is burning within," these surfaces are cold and blanched. At times, however, the mouth is parched, and the tongue dry and furred: but practitioners seem doubtful, whether any practical inference is thence to be drawn. What would be the state of these parts, if calomel, ardent spirits, laudanum, and spices were as largely employed in health, or in many common diseases, as in cholera, with as scanty a use of diluents? Might we not perhaps say, that a parched mouth and furred tongue, following the exhibition of such remedies in cholera, is rather favourable than otherwise, as indicating an action counter to that of the disease? When thirst is present, it seems to subdue all other feelings; and the ignorant soldier, as well as the medical man, who firmly believes that cold water is almost certain death, alike eagerly seek and swallow it. Two melancholy instances are recited, where Medical Officers have exerted their last and utmost efforts to reach, unperceived, even the water of the bathing tub; so intolerable are the pangs of this cruel thirst.

[*State of the Skin.*] The state of the skin in cholera is, in general, what we might expect to find it in patients labouring under such affections of the alimentary canal, and with the subdued circulation, which takes place in that disease. It is cold, generally clammy, and often covered with profuse cold sweats. Nevertheless, varieties occur in this, as in the other symptoms of cholera. The skin is sometimes observed to be dry, though cold; and sometimes of natural, nay, in some rare instances, of preter-

natural warmth. An increase of temperature has been repeatedly observed to take place just before death; but the development of heat appears to be confined then to the trunk and head; and, in almost all cases, this *partial* development of heat is found to be a fatal symptom. It is entirely unconnected with any restoration of the energy of the arterial system, or any improvement in the function of respiration. The heat, in such instances, has been observed to continue considerable for some hours after death.

The sensation imparted by touching the skin of a person ill with cholera is very peculiar, and reminds one of that imparted by a dead body. The skin, when much collapsed, becomes insensible, even to the action of chemical agents; and hence the usual vesicatories fail in producing any effect. The application of mineral acids, and of boiling water, in this condition of the skin, produces little or no effect, and some patients are said not to have been sensible of the operation.

The action of mineral acids on the skin is not, however, vesication, but rather that of a cautery; the cuticle, and the extremities of the subjacent vessels, appearing to be destroyed by them. It has been said, that vesication could not be produced in some stages of cholera, because the production of serum was, in common with the glandular secretions, arrested; but, when we reflect on the readiness, with which serous fluids are poured out in that disease, we shall be rather disposed to refer the failure in the action of vesicatories, even of hot water, to the diminution or destruction of the nervous energy of the skin. It is certain, that in a body *but just dead*, the application of boiling water will vesicate readily; and, if the accuracy of the observation respecting its non-vesicating power in advanced stages of cholera be established, we must infer, that there is less vitality in the skin in such cases, the patient being still alive, than in that of a body *recently dead* of some other disease.

At a very early stage in cholera leeches can procure little or no blood from the skin. This fact is noticed by some in another sense, as if these animals turned in abhorrence from the skin of a person ill with cholera. When the sweat is thin, it is usually poured out, in large quantity, from the whole surface of the body; but, when thick or clammy, it is more partial, and generally confined to the trunk and head. The action of the vapour, and hot baths, seems unquestionably to increase the exudation, or secretion from the skin; and the application of dry heat, as the natural temperature of the skin augments, appears to restrain these discharges; circumstances not very compatible with the supposition of a state of spasm of the vessels of the skin. The perspiration or moisture is often free from odour; at other times it has a fetid, sour, or earthy smell, which has been said to be peculiarly disagreeable, and to "hang long about the nostrils" of the bye-stander.

[Countenance.] That remarkable shrinking of the features of the face, which has acquired the emphatic term of the "true cholera countenance," appears in every case, not quickly cut short by medicine: but the degree, in which this symptom may be present, will be differently estimated, according to the natural contour of the patient's features. This expression of countenance, which conveys too truly that of death itself, cannot be mistaken; and, by an attentive observation it will be perceived, that a similar shrinking takes place throughout the limbs and all projecting parts of the body. The eyes not only become dim, and the cornea flaccid, but there appears to be an actual formation of a substance like a film, or membrane, in many cases: shewing, that this species of surface still possesses secreting powers. The abdomen has sometimes been observed to be tumid, but more frequently drawn towards the spine. The general apparent reduction of bulk, cannot however be considered as proportionate to the volume of fluids thrown out; nor, indeed, to depend essentially on that circumstance, as it occurs equally under the most moderate discharges.

[Respiration.] Respiration is not usually interrupted in the early stages of cholera, unless from a peculiarity in the mode of attack, under which spasm seizes the muscles subservient to that function. In many cases terminating in death, respiration has gone on in its mechanical part with little or no interruption, except that it becomes slower and slower; and an instance has been recorded, where this function was performed only seven times in the minute. Numerous cases on the other hand are noticed, especially in Europeans, where the interruption of respiration was most distressing, and could only be compared to the most violent attacks of asthma. Although the breath is stated in many of the reports, to have been deficient in heat, it is not clear that this was a general symptom: nor is it understood, that this coldness was more particularly

observed in cases of difficult and laborious respiration, than in those, where this function seemed to be, at least mechanically, performed without interruption.

[*Jactation.*] With respect to restlessness, or jactation, it is more common with Europeans than with natives. In cases of such sudden and dangerous illness, we must make some allowance for moral, as well as physical disquietude: and it is certain, that in very many cases, death approaches, while the patient lies in the most complete tranquillity. When much restlessness prevails, it is probably connected with some great oppression of particular organs; and, though the absence of this symptom is not, in itself, to be depended upon as affording grounds for a favourable prognosis, its presence is always highly alarming. The voice, in general, partakes of the debility prevailing in other functions, and is usually noticed as being feeble, often almost inaudible. Yet instances are not wanting, where the voice has continued of natural strength almost to the last moment.

[*Functions of the Sensorium.*] In a disease so highly congestive as cholera, where vertigo, deafness, and ringing in the ears, often prevail, and where very large quantities of opium and intoxicating matters have been swallowed, it is truly surprising, that the functions of the sensorium are so very rarely disturbed. It seems probable, that it is in many instances from an inaccuracy of language, that coma has been represented as a symptom of cholera: for we find that patients, who have just been represented to be in a *comatose* state, can, with more or less facility be roused from it; and, though he cannot overcome that retirement within himself, which constitutes so remarkable a feature of the disease, he will yet evince, by the clearness and precision of his answers, that his intellect is not destroyed. The same appearance takes place in tetanus, hydrophobia, and other diseases referred to the class of neuroses. This circumstance shews their affinity with each other, and is calculated to make us pause in receiving doctrines as true, which impute such disorders to depraved, functions of the nerves, whose origin, the sensorium commune, nevertheless, remains comparatively undisturbed. Coma must, however, be admitted occasionally to occur, especially towards the termination of the case, when it is fatal: but delirium has seldom or never been observed, unless as a sequelæ of cholera, when other and foreign morbid actions have been established. That degree of incoherence, which has accompanied the excessive spasmotic affections of the muscles, or which has followed the free use of opium and spirits, is not considered as an exception to this remark.

Syncope is not a common symptom in cholera, and when it has occurred, unless after venesection, it has generally been on the invasion of the disease. During the progress of this disorder, when the nervous energy seems to be almost annihilated, and the functions of the heart and arteries to be abolished, this symptom is yet very rarely observed! Deafness has been remarked, in some instances, to have been completely established, before any other symptom of the disease had developed itself; the patient continuing, for a time, to pursue his ordinary employments.

[*Recovery.*] When medical aid is early administered, and when the constitution is otherwise healthy, the recovery from an attack of cholera is so wonderfully rapid, as perhaps to be decisive of the disease being essentially unconnected with any organic lesion. In natives of this country especially, in whom there is ordinarily very little tendency to inflammatory action, the recovery from cholera is generally so speedy and perfect, that it can only be compared to recovery from syncope, cholic, and diseases of a similar nature: but, in Europeans, in whom there is a much greater tendency to inflammation, and to determinations to some of the viscera, the recovery from cholera is by no means so sudden or so perfect. On the contrary, it is too often involved with affections as various as the diseases of these viscera are known to be in this climate. The most frequent of the sequelæ of cholera are affections of the intestines, of the brain, of the liver, and of the stomach. When cholera, however, is of long continuance, and when the congestion appears to have been thoroughly established, few, either Europeans, or natives who outlive the attack, are restored to health without considerable difficulty.

It has been already remarked, that recovery from an attack of cholera is indicated by the return of the heat to the surface of the body, and a rising of the pulse. A deceitful calm, however, sometimes attends these favourable appearances, which too often mocks our hopes and expectations. When the disease is characterised by violent morbid actions, the diminution or cessation of these, however sudden, may generally be regarded as the usual mode, in which nature conducts the patient to recovery: but, in what

may be termed *negative* symptoms, the steps to recovery are extremely dark and obscure : and the evolution of natural heat, and arterial action have occasionally been noticed as amongst the last of the functions, which are restored. Patients have been observed to remain for one, two, and even three days in a state of the greatest collapse, and yet, contrary to all expectation, have recovered.

[*Urine.*] In cholera the secretion of urine, like all the other natural secretions, appears to be very generally suspended. This, indeed, has been considered so much a matter of course, that practitioners have very frequently not noticed it in their reports : but, wherever the secretion has appeared to be going on, the circumstance is particularly mentioned. When cholera first appeared, attempts were often made to relieve the patient by the catheter, under the supposition that the absence of urine was owing to *suppression*. When this secretion is not suspended during an attack of cholera, the urine is almost always limpid and clear, though in very small quantity ; a curious phenomenon, considering the probable state of the blood under such circumstances : for we may be permitted to infer from all the symptoms, that the blood is not only deprived of much of its serous or aqueous parts, by the profuse discharges which usually take place, but that the elements of all, or most, of the other natural secretions, are retained in it. We might, therefore, naturally have expected, that, if urine were secreted at all, it would possess some striking deviation from its natural appearance. Admitting that the blood is not freed from the elements of the secretions, which usually take place in health, what effect may their presence be supposed to have in producing some of the symptoms of the disease ?

It has been remarked, that the cases, in which urine appeared to be secreted, were not less dangerous than those, where this secretion was entirely suspended : but it is much more generally observed, that the appearance of urine, especially when this is the result of *restored* secretion, is always a most favorable omen. In many cases the secretion of urine has not been restored, before a period of 50 hours had elapsed from the commencement of the attack : and it has even been reported, that during a local prevalence of cholera, the secretion of urine has been, in some individuals, entirely suppressed, although no other derangement of the health took place. Instances of this kind were generally observed during great heats, and under much fatigue.

[*State of the Blood.*] No symptoms of cholera are so uniform in their appearance and progress, as those connected with the blood, and its circulation. Although the reports, in general, afforded ample reference to this point, it still appeared to the Medical Board to be one of such importance in the pathology of the disease, that a circular letter was addressed to about thirty Medical Officers, who were supposed, from their experience in the treatment of it, to be best qualified to afford information. Attention was especially directed to the following considerations : first the influence which the state of the blood, in those affected with cholera, might be supposed to have in producing some of the symptoms : second, the colour of the blood abstracted from a vein in a person affected with cholera : third, the colour of the blood after a certain quantity had been taken, and, the effect, which any alteration of colour might have on the condition of the patient : fourth, if arteriotomy had been practised, the colour of the arterial blood in cholera : and lastly, the period, from the first attack of the disease, at which blood was abstracted. It is established by the replies to this letter, as well as by an immense mass of concurrent evidence, that the blood of persons affected with cholera, is of an unnaturally dark colour and thick consistence. These appearances are very uniformly expressed by the terms, dark, black, tarry, in regard to colour ; and by thick, ropy, syrupy, semicoagulated, in respect to its consistence. The change in the condition of the blood is likewise fully proved to be in the ratio of the duration of the disease ; the blood, at the commencement seeming to be nearly, or altogether natural, and more or less rapidly assuming a morbid state as the disease advances. Some very rare cases are recorded where, however, this morbid state of the blood was not observable, although the disease had been for some time established : and instances have occurred, where the blood flowed readily, sometimes little altered, where, nevertheless, death ultimately ensued. The abstraction of blood has been found by all practitioners to be very difficult and uncertain ; and the uncertainty has been variously imputed to the feebleness of the circulation, to the thick consistence of the blood, and to the combined operation of these causes. The blood drawn from patients, suffering under cholera, is stated to be generally very destitute of serum, never to exhibit the ap-

pearance of buff, and to be generally disposed to coagulate quickly. Several instances, however, have occurred, where the coagulation was slow, and imperfect. A great majority of the reports state unequivocally, that, after a certain quantity of dark and thick blood has been abstracted from a patient under cholera, it is usual for its colour to become lighter, its consistence to become less thick, and for the circulation to revive: such appearances always affording grounds for a proportionably favorable prognosis. In many instances, however, no such changes have been observed to accompany the operation of bleeding, while yet the result was favorable. The blood is generally found to be less changed in appearance, in those cases of cholera, which are ushered in with symptoms of excitement, than where the collapsed state of the system has occurred at an early period. The blood has been occasionally found, on dissection, to be of as dark a colour in the *left*, as in the *right* side of the heart; affording reason to believe that in the whole arterial system it was equally changed. The temporal artery having been frequently opened, the blood was found to be dark, and thick, like the venous blood: but it would appear, that this operation has not been performed in general, until the attempts to procure blood from the brachial or jugular veins had failed: little or no blood could be obtained, the artery merely emptying itself in a languid stream, not in a jet, and then collapsing. An instance is stated where the surgeon, despairing of other means, cut down upon the brachial artery, but so completely had the circulation failed, that no blood flowed. When reaction has been established, the blood occasionally shews the buffy coat.

It would have been highly interesting, if, in those cases of cholera, which were distinguished by the freedom of the mechanical part of the process of respiration, and by the absence of great alvine or cuticular watery discharges, the colour and consistence of the blood had, in a greater number of instances, been ascertained. The evidence on these points, however, must be acknowledged to be defective. Amongst natives, respiration is pretty generally free until the very last stage; and the colour and consistence of the blood, in the instances where venesection has been performed, has been very uniformly stated to be dark, whether excessive discharges prevailed or not. It may thence be allowable to conclude, without any farther particular evidence, that though the passage of the blood through the lungs has been free, its natural change is interrupted by cholera. The coldness of the body in cholera, not only on the general surface, but in the axilla, as ascertained by the thermometer, might also warrant us in concluding, that the *temperature* of the blood is under the natural standard: but the inference is not sufficiently established by accurate observation. With respect to the watery discharges, we are not always sure that during life the stomach or intestines have been emptied. These organs have sometimes been found, after death, to be filled with fluid, though no purging, or vomiting had been observed. Although, therefore, the thick consistence of the blood would seem to find a ready explanation in the circumstance of the profuse excrementitious discharges robbing it of its natural serum: and although the general tenor of the reports would seem to warrant the conclusion, it must yet be confessed there is reason to believe, that the blood has been found occasionally to present these appearances, when no such discharges had taken place.

[*The terminations of Cholera.*]—The terminations of cholera will readily be apprehended from the observations, which have already been made. It is the declared opinion of many of the practitioners, who have had to cope with the disease, that its tendency to death is so great as never to be counteracted by the unaided efforts of nature. The same opinion is no less evidently implied by the observations of all, that the delay of but a few hours places the patient beyond the reach of art: for hours are, in this disease as days in any other. There are not wanting men, however, who, either from an affectation of singularity, or from the melancholy results of their own practice are said to doubt the power of medicine in the cure of cholera, and to ascribe the recoveries, which they have witnessed, to the natural, unaided powers of the constitution. Such feelings are too apt indeed to arise in the mind, when the sad experience of some malignant epidemic visitation, or a succession of intractable cases, comes to be contrasted with the more successful efforts of others, who have had a less formidable enemy to combat: but they are especially apt to arise on hearing of the reputed cures made by the aid of native establishments. It is obviously very difficult to arrive at the means of making a true estimate on this subject. Where the aid of the European practitioner has been applied, the mortality has still undoubtedly, been extremely great: and the accounts of native doctors cannot be at all relied on, either for their veracity, or their qualifications to dis-

criminate the disease. Such of the reports of the native revenue servants as have come under the observation of the Medical Board, all tend to prove that by far the greater proportion of people, who suffered attacks of cholera, and had no efficient aid, died. The Ameen of Ganjam writes thus; "The people, who get the cholera morbus never recover: death to them is certain." The Resident at Hyderabad states, that he feared every case treated by the natives proved fatal. The family of a wealthy Nair in Travancore, consisting of 19 people, were all, save one, cut off in a few hours. Another family of five all died. Mr. Searle, at Mannatoddy, states, that of 28 villagers attacked with cholera, 26 died; the other two recovered by his assistance. Death may, therefore, be said to be the ordinary termination of cholera; and there is, in truth, very little variety in the course, which the disease pursues towards it. This has already been described as consisting in a general suspension of the natural, and a gradual cessation of the vital functions, rather than in the establishment of morbid actions. Cases have been remarked, where the vital functions have been more suddenly overcome, and where death took place before the usual development of the symptoms; others, where life is extinguished in some sudden convulsive commotion of the system; and some, as if from apoplexy. Fatal terminations likewise occur from topical inflammations supervening; as, gastritis, enteritis, or hepatitis.—The intestinal canal seems especially obnoxious to the effects of cholera, numbers of those attacked with it, having subsequently been seized with dysentery. The favorable issue of cholera certainly resembles that of diseases usually called spasmodic, unless in cases, where it has lasted so long as to involve other trains of morbid actions, connected with organic lesion; or with a febrile affection of the sanguiferous system. *As its fatal termination has been stated to be effected by a suspension of the natural, and a gradual cessation of the vital functions, so its favorable termination may be stated to be simply a restoration of these functions; a change, which usually takes place with considerable rapidity, and which often arises under circumstances apparently the most desperate.*

[*Diagnosis.*] The diagnosis in cholera is seldom involved in any considerable difficulty, or obscurity. The most important distinction is that between the two species of cholera, the cholera biliosa, and the cholera asphyxia, especially that form of the latter, which is primarily attended with symptoms of excitement. Where the evacuations are tinged of a yellow, or greenish hue, where the matter vomited is bitter to the taste, while the skin remains warm, and the pulse good, the disease may be regarded as bilious cholera, commonly so called—but, where, after the first emptying of the primæ viæ, the evacuations are of a watery consistence, colourless, turbid, or white; when no urine is voided; where the surface becomes cold; where the features are collapsed; where the spirits are greatly depressed; and where the pulse quickly flags, the case may almost certainly be regarded as cholera asphyxia. As the disease advances, the cessation of the pulse in the arteries of the extremities, the shrivelled and corrugated skin of the hands and feet, the restlessness, deafness, and general depression, leave no doubt of the nature of the disease. Many affections denominated nervous, such as syncope, cholic, hysteria, dyspepsia, spasm of any kind, and the cold stage of fevers are apt, during the prevalence of cholera, to create an alarm of it. The remedies applicable to such cases being in general equally appropriate to the treatment of incipient cases of cholera, and their effects in both instances being often very similar, it is much to be suspected that many of the former have been improperly pronounced to be cases of the latter. Cases of cholera sometimes, apparently, commence by an insidious diarrhoea; or supervene on the action of purgatives, especially saline purgatives; and are then exceedingly apt to be mistaken, both by the patient and his physician. All the experience which we have yet had leaves the mind much in doubt whether this diarrhoea be a primary symptom, or merely indicates a predisposition to the disease. The same observation applies to the effect of purgatives. In such difficult cases, much may be inferred from the state of the epidemic influence prevailing at the time. If cholera be prevalent, they will generally attract immediate notice, and it is the safest course to treat them as cholera: but many of our most lamented casualties have happened from seizures of this description, which were solitary, and altogether unsuspected by the sufferers till too late. There seems however to be something peculiar to cholera, in blinding the patient to the real nature of his case: or, perhaps, conscious of the tendency of some of his symptoms, he seeks to repress the conviction; and is unable to admit or believe that, with little sensible disturbance of health, he already stands on the verge of his grave.

[*Appearances on Dissection.*] The appearances on dissection, after death following attacks of cholera have been very extensively ascertained, in the bodies of European subjects, but in an extremely limited degree in those of native subjects. This is generally stated to have arisen from the aversion betrayed by the friends of deceased natives to the operation of dissection, as if this aversion were peculiar to them. The truth however rather seems to be, that when a European soldier dies, it is extremely rare, that there is any person so connected with him as to derive the right of objection to a post-mortem examination: while every native has friends at hand to see the last offices performed to his body. It is probable that were the cases similar in this respect, we should hear as much of the objections of Europeans, as of natives to dissection of the dead bodies of their friends and relations.

Although dissections are very generally practiced in European hospitals in this country, they are performed under some disadvantages, which must operate to a certain extent, in diminishing the minuteness and accuracy of the information thence derived. The heat of the climate imposes the necessity of interment at a very early period after death; and it likewise imposes the necessity of interring at certain hours of the day, either soon after sunrise, or about sunset. Hence, if a man dies at any time between noon and sunset, his *cörpe* is generally interred the following morning; if he dies any time between sunset and noon, the body is generally buried in the following evening. It follows therefore that there is often but a very limited time allowed for dissection; the pressure of these circumstances however not unfrequently leads to the operation being performed so immediately after death as to afford considerable advantages. Dissections have been chiefly made on the bodies of European soldiers, a class of men acknowledged to be peculiarly liable, in this climate, to visceral disease of all kinds. Under these circumstances, dissection reports should be viewed with care, in reference to the general states of morbid bodies; and with the most attentive consideration of the precise import of the terms employed.

The external appearance of European subjects, who have sunk under cholera, closely resembles that which has been noticed as taking place during life. The surface is livid, the solids are shrunk, the skin of the hands and feet is corrugated. There seems no sufficient evidence of any uncommon tendency in the body to putrefaction after death, nor of any characteristic *fœtor* from the abdominal cavity. No particular morbid appearances have been found in any of the cavities of the body, which are lined with *serous membranes*, or in these membranes themselves. The cavities of the pleura, of the pericardium, and of the peritoneum have, almost uniformly, been found, in a natural state; or, the deviations from that state have manifestly had no connexion with cholera. The surfaces which are lined, or covered with *mucous membranes*, have, on the contrary, very generally exhibited signs of disease. These will be noticed, as the organs connected with them come to be mentioned.

The lungs have not unfrequently been found in a natural state, even in cases where much oppression of respiration had existed previously to death. Much more generally, however, they have been found either to be gorged with dark blood, so that they have lost their characteristic appearance, and have assumed more that of liver, or spleen; or they have been found to be in the opposite state; that is, collapsed into an extremely small bulk, and lying in the hollow on each side of the spine, leaving the cavity of the thorax nearly empty. This appearance has been so remarkable as to induce Dr. Pollock, of H. M. 53d regiment, to conceive, that it could only be produced by the extrication of a gas within the cavity of the pleura, capable of overcoming the atmospheric pressure. It is understood, however, that opportunities were had of piercing the thorax of the dead body under water, and that no gas was extricated. As there appears to have been an absolute vacancy in the cavity of the pleura, that is to say, the lungs did not by any means fill it, it would seem that that viscera had exerted a contractile power, adequate to overcome the pressure of the atmosphere. The blood found in the lungs has been always very black. The heart and its larger vessels, have been found to be distended with blood, but not so generally as the apparent feebleness of their propelling power, and the evident retreat of the blood to the centre, would have led us to expect. The right auricle and ventricle being gorged with blood is nothing peculiar to cholera; but some dissections have shewn the left cavities to be filled even with *dark* or *black* blood, which we may reckon as a morbid appearance more peculiar to it. In the abdominal cavity, the peritoneal coverings of the viscera, being *serous membranes*, present in general but little deviation from the healthy state; occasionally, indeed, the morbid accumulation of blood in the vessels of the viscera, imparting an appearance of turgi-

dity and blueness, is evident on their exterior surfaces. We also find them bearing marks of inflammation, especially where the patient may have lingered long, before death. In other cases, the whole tube has had a blanched appearance, both externally and internally. The stomach and intestines generally preserve their ordinary volume. The appearance of the omentum is not sensibly affected in cholera. The stomach is found to be so variously affected as to destroy all grounds for pathological reasoning. It is very rarely found empty, or much contracted after death, nor has any appearance of spastic stricture of the pylorus been often detected." It has however sometimes occurred. Its contents appear to be chiefly the ingesta in an unaltered state: in some cases greenish, or yellow, or turbid matters are found. The stomach has been said to have been found "lined with calomel." Various appearances, either of active inflammation or a congested state of the vessels, have been noticed, sometimes in one part and sometimes in another. The parts seem as if they were sphacelated, thickened, softened, and friable; and, in short, exhibit so great a variety of appearances, from a perfectly natural state to the most morbid, that no particular light is thrown by them on the disease.

The intestinal tube is sometimes collapsed, but oftener found to be more or less filled with air; distended in some parts into bags or pouches, containing whitish, turbid, dark, or green-coloured fluid, and in others, presenting the appearance of spastic constriction. The latter, however, is not common. No faecal or other solid matters are found in the intestines; but, very commonly, large quantities of the congee-looking fluid, or of turbid serous matter. The duodenum, and occasionally the jejunum, have been found loaded with an adherent whitish, or greenish mucus; at other times they have been found seemingly denuded of their natural mucus: and often perfectly healthy. Traces of bile in the intestines, or of any substance apparently descended from the stomach are exceedingly rare. Sanguineous congestion, and even active inflammation, are stated to be more common in the bowels than in the stomach; but on the other hand, instances are very numerous, where no such indications have been detected. The thoracic duct is stated to have been empty of chyle. The liver has been commonly found to be gorged with blood, but not always: it is usually an organ very vascular: and it would probably demand a nicer discrimination than has been bestowed on the subject, to distinguish the degree of congestion in which it is naturally left by the settling of the blood after death in ordinary diseases, from that which has been observed after an attack of cholera. The gall-bladder has almost universally been found to contain bile, and in the great majority of cases even to be completely filled with it. As is usual with this secretion in cases of retention, it is of a dark colour. Very different states of the gall-ducts have been described; cases of constriction and impermeability, seeming to be equally numerous with those of an opposite character.

The urinary bladder is found, we may say universally, without urine, and very much contracted. The lining or mucus membranes of the bladder and ureters, have been found coated with a whitish mucus fluid. The smallness of the bladder after death has been generally adduced in proof of great spasm; but it is not unfrequently found to be equally small after death from other diseases; and, it seems the nature of that organ, when it contains no urine to contract, so as to leave no cavity. Dr. Baillie, in his *Morbid Anatomy*, thus notices this fact. "The bladder is also found contracted to such a degree as hardly to have any cavity. This is generally not to be considered as a disease, but simply as having arisen from a very strong action of the muscular coat of the bladder previously to death." The appearance of the spleen, which is so various under the ordinary conditions of the body after death, has indicated nothing that can be mentioned as belonging to cholera. The vessels of the mesentery have been very generally found to be uncommonly full of blood.

In the head, appearances of congestion, and even of extravasation have been frequently observed; but, not so uniformly, nor to such extent as to require any particular notice. Only one case has been given, where the state of the spinal marrow was examined: and in that, indications of great inflammation were detected in its sheath: the case, however, was, in some degree, a mixed one.

From this general view of the appearances found on dissection of the bodies of persons, who have died from cholera, it is manifest, that the information thence derivable, is, in a pathological view, of a negative nature only. It is nevertheless, of consequence in a practical sense, especially in treating the sequelæ of cholera.

TABULAR ANALYSIS of the INDIVIDUAL REPORTS transmitted to the MADRAS PRESIDENCY.

Name of Medical Officer.	Premonitory Diarrhoea.	General Symptoms.	Consecutive Fever.	Contagious or not?
1. Ass. S. Haines	None mentioned	vomiting and purging, prostration of strength, spasms, languid circulation, sunken eyes, &c. no blueness mentioned	none mentioned	not contagious
2. M'Andrew	none ditto	the usual symptoms (no blueness)	none	decidedly not contagious
3. Rogers	none ditto	the usual symptoms, no blueness mentioned	none	no mention of contagion
4. W. Smith	none ; restlessness, vertigo, nau- sea, borbor- ygmi	the usual symptoms, no blueness	none there was sometimes diarrhoea as a sequela	epidemic & not contagious—one attack does not secure a- gainst another
5. Sutton	none	the usual symptoms, no blueness	none	decidedly non-con- tagious
6. Scott.	none	usual symptoms no blueness	none	decidedly non-con- tagious
7. Sevestrie	none	usual symptoms no blueness	none	epidemic
8. White.	none	usual symptoms no blueness	none	suspects it to be contagious
9. Wyllie.	none	usual symptoms instant- aneous—no blueness	none sometimes disordered secretions of the digestive organs	not contagious
10. W. Ogilby.	none	usual symptoms no blue colour	none	contagion men- tioned
11. Kelly.	commenced with diarrhoea then vomiting & all the other symptoms in rapid succession	usual symptoms no blue colour	none	endemic and contagious
12. Peyton	none	usual symptoms no blue colour	none	poison in the atmos- phere

Name of Medical Officer.	Premonitory Diarrhœa.	General Symptoms.	Consecutive Fever.	Contagious or not?
13. Campbell	none	usual symptoms no blue colour, except blue eyelids	none	non-contagious
14. Sheddell	none	usual symptoms no blue colour	none	no mention of contagion—considers the disease "more of a diarrhœa than cholera"
15. Dean.....	none ; constipation	usual symptoms livid lips	none	epidemic no opinion as to contagion
16. Christy.....	none	usual symptoms no blue colour	none	no mention of contagion
17. Wilson.....	none	usual symptoms no blue colour	none	cannot imagine the cause
18. Boyd.....	no diarrhœa, vertigo, &c.	usual symptoms nails purple	none	no mention of contagion
19. Neilson.....	none	usual symptoms no blue colour	none	no mention of contagion
20. Scarman....	none	usual symptoms no blue colour	none	no mention of contagion
21. Millar.....	none	usual symptoms purple colour	none	no mention of contagion
22. Cox.....	none	usual symptoms no blue colour	none	no mention of contagion
23. Stone	no diarrhœa, head-ache and languor	usual symptoms no blue colour	none	morbific influence of the atmosphere
24. Colclough....	none	usual symptoms no blue colour	none	no mention of contagion
25. Trotter.....	none	usual symptoms no blue colour	none	no mention of contagion
26. Duncan.....	none	usual symptoms countenance and nails livid	none	doubtful "causa latet"
27. Orton	giddiness, head-ache, nausea, and griping, loose stools, first symptoms	usual symptoms no blue colour men- tioned	no fever mentioned	convinced it is not contagious

<i>Names of Medical Officers.</i>	<i>Premonitory Diarrhœa.</i>	<i>General Symptoms.</i>	<i>Consecutive Fever.</i>	<i>Contagious or not?</i>
28. Owen	none	usual symptoms no blue colour	none	no mention of contagion
29. Mac Laine ...	none	usual symptoms no blue colour	none	no mention of contagion
30. Connell	none	usual symptoms no blue colour	none	unable to give decided opinion, inclines to contingent contagion
31. Bucke	none	usual symptoms no blue colour	none	no mention of contagion
32. Stain.....	none	usual symptoms no blue colour	none	thinks the disease communicable
33. Currie	Diarrhœa in some native soldiers cured without the prevention of cholera	some of the cases had no purging, but constipation.	none	epidemic
34. J. Duncan ...	no diarrhœa	few or no spasms	none	epidemic broke out on the same day that the North-East monsoon set in.
35. Couran.....	no diarrhœa	no cramps or spasm	none	no mention of contagion
36. Goldie	none	usual symptoms	none	decided anti-contagionist.
37. M'Lean.....	none	usual symptoms	none	no mention of contagion
38. Cother.....	none	usual symptoms no blueness	none	no mention of contagion
39. Neilson.,.... (Aug. 1821.)	none	usual symptoms no blueness	none	no mention of contagion
40. Mitchell (1819.)	none	usual symptoms no blueness	none	not contagious
41. Chalmers.... (1819.) (1820.)	none	usual symptoms the cattle were affected with a similar disease no blueness	none	not contagious travellers appear to carry with them an infectious atmosphere

<i>Names of Medical Officers.</i>	<i>Premonitory Diarrhoea.</i>	<i>General Symptoms.</i>	<i>Consecutive Fever.</i>	<i>Contagious or not?</i>
42. England (1819.)	Nansea, diarrhoea, headache, for some hours, and sometimes a whole day	usual symptoms no blueness	none	not contagious
43. Wyse..... (1819.)	none	usual symptoms ; fear a great cause no blue colour	none	epidemic
44. Mather (1819.)	none	usual symptoms no blue colour	none	no mention of contagion
45. Wight (1822.)	none	usual symptoms no blueness	dysentery in several cases	epidemic thinks it may be slightly contagious
46. R. Wight	none	usual symptoms livid face, and livor of dead body	none	a malignant epidemic
47. Turnbull (1822.)	none	usual symptoms no blueness	none	no mention of contagion
48. Donaldson .. (1822.)	none	usual symptoms	none	attributes the disease to various causes, moral and physical. Does not mention contagion
49. R. H. England (1821.)	diarrhoea of some hours, pyrexia	usual symptoms livid appearance	inflammation of brain stomach & bowels sometimes succeeds	assimilates cholera with yellow fever, plague, and typhus, and consequently considers it so far contagious
50. Chapman ... (1821.)	none	usual symptoms no blueness	none	poison in the atmosphere, contagious, afterwards says it is endemic
51. Provan (1819.)	none	usual symptoms no blueness	none	inclined to contagion
52. Ewart (1820.)	none	usual symptoms few spasms no blueness	none	cannot divine the cause
53. Williams (1820.)	none	skin warmer than usual	none	no opinion
54. Fasken.....	none	usual symptoms	some cases of dysent. and hepat.	non-contagious

<i>Names of Medical Officers.</i>	<i>Premonitory Diarrhoea,</i>	<i>General Symptoms.</i>	<i>Consecutive Fever.</i>	<i>Contagious or not?</i>
56. Barton (1821.)	none	usual symptoms	debility and disordered bowels	not contagious
57. Stokes	none; bowel complaints prevailed previously to the breaking out of cholera	usual symptoms, three degrees or grades no blueness	visceral affections, "dropsy and some slight fevers"	seemed sometimes to be communicable
58. A. Campbell.. (1820.)	none mentioned	usual symptoms	diarrhoea	atmospheric
59. Pollock. (1821.)	no diarrhoea	circulation not affected	none	"some extensive cause"
60. Job (1821.)	none	bilious evacuations few died	none	no cause assigned
61. Cruickshank. (1821.)	none	usual symptoms	none	thinks it infectious, but that its laws are extremely dissimilar to those of other contagions
62. Alexander. (1821.)	none	usual symptoms	none	no opinion
63. Patterson. (1822.)	none	usual symptoms	none	atmospheric and contagious
64. Dr. W. Pollock (1822.)	none	many of the worst cases had neither vomiting, purging, or spasms	none	a peculiar morbid poison unknown
65. Cowan (1823.)	no premonitory symptoms	usual symptoms purple colour. All other diseases disappeared during cholera	none	no opinion given

SUMMARY.

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|------------------------------------|------------------------------|
| 1 Suspects it to be contagious. | 1 Decidedly contagious. |
| 1 Doubtful. | 2 Infectious. |
| 1 Contingent contagion. | |
| 1 Endemic and contagious. | |
| 1 Slightly contagious. | |
| 1 Inclined to think it contagious. | |
| 1 Sometimes communicable. | 13 Decidedly not contagious. |

42 make no allusion to contagion. Of these 42, the great majority speak of the disease as an epidemic arising from some atmospheric or terrestrial cause; and, as the queries of the Madras Board particularly directed the attention of medical officers to the subject of contagion, we may fairly conclude that, where no allusion to contagion is made, no proofs of it presented themselves to the observers. Mr. Scot, the Secretary of the Madras Medical Board, sums up the opinions of the contagionists and anti-contagionists, and gives no opinion himself on either side.

Without anticipating the decision of the Bengal Board, we may be permitted to extract the following pithy sentence.

" This is the sum-total of the proofs in favour of the contagious nature of the disease in this quarter. *But, in fact, it amounts to nothing.*"—BENGAL REP. p. 147.

REMARKS.

The above tabular analysis of the data on which the Madras Board has founded its report, has cost us much labour, and we have executed this task with impartiality and honesty.

The balance in favour of or against contagion, we leave to our readers, and we shall make no remark on that part of the subject, since the determination of this point ought surely to be left to the evidence of our own senses in this country, where the disease is considered to exist. The summary at the end speaks for itself. In this country, and especially in London, the idea of contagion is very generally abandoned.

but not
but not

The great object of our present enquiry, however, is the "*perfect identity*" of the Indian Epidemic with that which now prevails. An impartial examination of the report which we have here put upon record, must convince unprejudiced readers, that the Indian Epidemic bears a very close resemblance to *one stage or form* of the epidemic which has lately prevailed on the Continent, and now obtains in England. An equally impartial examination of this report will bring, we think, a conviction that, if they be the same disease, they are materially different in their general aspect, when the whole train of phenomena is taken into account. In the Indian report, the premonitory diarrhoea is scarcely alluded to, except in two or three instances, and then it is mentioned as taking precedence of vomiting, in the succession of symptoms; and, in only one instance, as lasting some hours, or perhaps a day, before the confirmed asphyxial form presented itself. Let us compare this with the disease as it appeared in the North, and now exists in London. Diarrhoea is not merely the *precursor* of the deadly, the asphyxial cholera, but it is the first stage of the disease itself, and consequently an integral part of it. Dr. Whiting, who has seen much of it in Southwark, declared in a public society, that the epidemic was a *mild one*, in consequence of the disease being diarrhoea in the first stage, and only assuming the asphyxial aspect when the bowel-complaint was neglected. Nay, this very doctrine has been publicly promulgated by the Board of Health, on Tuesday, the 13th March, 1832, in the following words:—"By the word Cholera, is here to be understood a disease characterised by the following symptoms, viz.—a purging and vomiting of fluids, neither feculent nor bilious, with cramps and prostration, to which, in extreme cases, are added coldness, shrinking, &c.*

* The Editor of this Journal most unhesitatingly pledges himself to the fact, that the above circular conveys a most erroneous idea of the disease now existing in London. He cedes to every member of the profession, as to talent—to no man, as to accuracy of observation. He agrees with the Board that *feculent vomiting* are not to be frequently found in the epidemic disease; but that the premonitory diarrhoea is devoid of *bilious* admixtures in the beginning, he most positively denies. Neither the members of the Board of Health, nor the inspectors employed by them, are competent judges on this point. Those only who are in ample private practice, and who see things with their own eyes, can be proper adjudicators. The descriptions given by patients, and especially by pauper patients, are almost wholly erroneous. It is very true that, after a few days, or, in some cases, after a few hours, the evacuations are found to be *watery*. How can they be otherwise, in people who have evacuated all *feculent* matters?

Thus then, it is clearly established that diarrhoea, as the first stage, or at all events the preliminary state, is the GENERAL RULE, while, in India, it was the exception, and a very rare one—hence, an important difference between the Asiatic and British epidemics, as far as that stage is concerned.

We now come to examine the asphyxial stage of the disease. And here a most important consideration forces itself, at once, upon our attention. In the East, the asphyxial state was the *first stage*—in the West it is the *second*. In Asia, the individual was knocked down, as it were, by the poison—in Europe, he is prostrated, not only by the original poison, but by the exhausting diarrhoea, which precedes and leads to the cold or asphyxial paroxysm. Here then we see the different conditions of the Asiatic and the European, when the asphyxia commences. No wonder that Magendie observed—"Cholera begins where other diseases end." In Asia, the powers of life are stunned or overwhelmed by the poison—here they are exhausted by the effects of the poison (or epidemic influence)—the DIARRHOEA. Hence it is that, in India, the struggling victim shewed the most terrific spasms and the most violent vomiting and purging; bearing the loss of twenty, thirty, fifty, sixty ounces of blood, with the greatest benefit—while, in this country, the asphyxial stage supervening on the diarrhoeal, the individual presents the features and phenomena of death, resembling, no doubt, the asphyxia of Indian Cholera, but being the collapse of exhaustion, not that of congestion. In India, at the commencement of the asphyxia, the greater part of the fluids, though driven from the surface, were yet in some part of the body. Here the scanty, and perhaps vitiated fluids, which have been furnished by bad food, or spared by inanition, are drained away by the diarrhoea before the asphyxial stage occurs—and there are no good materials to work upon. Under these circumstances, we can be at no loss to account for the great mortality of the disease in Europe as compared with Asia. On the Continent of Europe it was nearly 1 in 2. In England, it has been somewhat less than 1 in 3. In India, it was not 1 in 7. But this calculation applies to the mortality in the *asphyxial stage* of the disease, both in India and Europe. If we apply the calculus to the

EDITORIAL

and who are unable to take, or unable to procure any ingesta that would produce feculent materials?—"Ex nihilo nihil fit." Those who are accustomed to examine the dejections of people who are labouring under diarrhoea or dysentery, know well that the dejected matters, *after a certain period*, are devoid of either bile or faeculence; they are, in this, as in all other cases of the kind, and at all other times, *watery*. In forty-nine cases of the epidemic diarrhoea, which the Editor has carefully observed in the middling and upper classes of life, there was faeculence, more or less, and also bilious colouring in the stools. He challenges the whole profession, in this metropolis, to shew him a single case, where the "rice water" evacuations are the *primary symptoms*, as stated by the Board of Health—and, as to the *ulterior* evacuations, they are watery, have been always watery, and cannot be otherwise than watery, where food cannot be taken, or cannot be procured. The Editor would ask the advocates of "rice water," whether the food (if taken) is converted into gruel;—and if no food is taken, whether there can be anything but "rice water?"—The plain and evident fact is, that, after the epidemic choleric fever commences in the form of diarrhoea, the patients either have no appetite for food, or have no food to take, in the generality of cases; and as the disease is, to use the words of Sydenham—"a fever turned in upon the guts," all the fluids rush towards that point, and "rice water" is the result. In the middling and upper classes, where the disease is mild, and the appetite and digestion not entirely withdrawn, we have both faeculence and bile in the evacuations. Want of accurate observation is the bane of the medical profession; and there are now, as in the days of Cullen, more false facts than theories in medical matters.—ED.

whole disease, as it appears in this country, and consequently including the diarrhoea, as the Board of Health has officially, and we think properly done, the mortality is not 1 in 50—perhaps not 1 in 100. In respect to the asphyxial stage in this country, under the circumstances above-mentioned, the wonder is, not that the number of recoveries should be so few, but that there should be any recoveries at all!

And here we would draw the attention of our brethren to the danger of applying the Indian practice indiscriminately to the asphyxial stage (the only one where the symptoms resemble each other) of the present epidemic. They are directing the same energetic measures to the *second* stage of a disease, which were employed in India in the *first* stage of a disease said to be identical! Let them ponder on this point! The fatal doctrine of contagion, importation, Asiatic cholera, &c. which has superseded the wise maxims of Sydenham, in studying accurately the constitution of the year, and the phénoména of the reigning epidemic, has led them into a false position! We unhesitatingly maintain, from observation of the disease, both in India and in this country, that, granting, for argument's sake, the Cholera, so called, to be identical in both places—nay more, that it has been transmitted, like a chest of indigo, from Bengal to London;—it is yet, in its asphyxial form, presented to us here, under a totally different character, physiological and pathological. In India, the cold or asphyxial stage was *primary*; and the effect of an intense poison, whatever that poison may have been.—In England, the cold or asphyxial stage is *secondary*, the conjoined effect of an epidemic influence, and of a preceding stage—DIARRHEA. In the former case, the body is *prostrated*, but not drained of its fluids;—in the latter, the body is *collapsed*, and the fluids already reduced exceedingly by a flux of considerable duration from the bowels. It is futile to say that there are *exceptions* to this statement. It is by the general rule that we are to be guided, and not by the exceptions. *Exceptio probat regulum.*

CONSECUTIVE FEVER.

We now come to a most important point of the inquiry, as to the identity of the Asiatic and English epidemics—namely, the consecutive fever. In respect to the MADRAS Medical Board, we need only refer to their report itself to prove that the word *fever* is not even mentioned. The recovery is compared to that from *syncope*, where proper means are employed; and, under other circumstances, the sequelæ are reported as chronic visceral affections. No such thing as *fever* is alluded to. But referring from the aggregate account of the Board to the individual reports, from which the account was drawn, we find that not one single reporter enumerates *fever* as a sequela of cholera, in the extensive territory under the Presidency of Madras. To this we may add the testimony of Sir William Russell himself, who officially stated the fact, that in the disease, as it appeared in Russia, an entirely new feature was added—the consecutive fever—which destroyed more than the original disease! Is it possible that human reason, or even inveterate prejudice can require more than this evidence to bring conviction that *fever* was no consecutive or integral part of Indian cholera, as far as the Presidency of Madras is concerned?

We now turn to Bombay. The Medical Board of that Presidency quotes a passage from Mr. Jukes, to the following effect, as relates to BENGAL:

"The fever which invariably attended this second stage of the disease, may be considered to have been rather the result of Nature's effort to recover herself from the rude shock which she had sustained, than as performing any integral and necessary part of the disorder itself. It partook much of the common bilious attacks prevalent in these latitudes."

The evident and natural conclusion is, that what Mr. Jukes calls the *fever*, is

the reaction from the cold stage, like the hot, or fever stage of an ague. But be this as it may, the following comment by the Bombay Board will settle the question, as far as the Bombay Presidency is concerned.

"We shall only therefore mention, that the subsequent fever, which it appears has generally accompanied it in Bengal, has been but little, if at all, observed on this side of India." xxi.

We think we have now demonstrated that throughout the whole peninsula of India, namely, the Presidencies of Madras and Bombay, the consecutive fever, so universally observed on the Continent and in England, was absent. If these differences do not destroy the "perfect identity" of the disease, as it presented itself in Asia and Europe, then there is an end to all fair reasoning in medical science.

But we will add one more argument against the "perfect identity" of the disease in India and Europe, which will place some of our opponents between the cædine forks. It will hardly be disputed that the practitioners of India were better judges of the *appearances of cholera* there, than our literary practitioners at home, who never saw the disease. What says the Bombay Board then, as to the identity of the disease in India and the disease in England, as described by Sydenham?

"This disease seems to have been known to Dr. Sydenham, and to have been accurately described by him as a prevailing epidemic in England in 1669, under the title of *Cholera Morbus*; and as he nowhere mentions bile as forming any part of the discharges from the stomach or bowels, it may be justly inferred that if it had, it could not have escaped the notice of so accurate an observer. He says—

'Malum ipsum facile cognoscitur, adsunt enim vomitus enormes, ac pravorum humorum cum maxima difficultate et angustia alvi dejectio; cardialgia, sitis. Pulsus celer ac frequens, cum æstu et anxietate, non raro etiam parvus et inæqualis, insuper et nausea molestissima, sudor interdum diaphoreticus, crurum et brachiorum contractura, animi deliquium, partium extremarum frigiditas, cum aliis notæ symptomatibus, quæ astantes magnopere perterritrefaciant, atque etiam angusto viginti quatuor horarum spatio ægrum intermant.'

And again in his letter to Dr. Brady describing the epidemics of 1674, 5, and 6, he says—

'Exente æstate Cholera Morbus epidemice jam sæviebat, et insueto tempestatis calore evectus, atrociora convulsionum symptomata, eaque diuturniora secum trahebat, quam mihi prius unquam videre contigerat. Neque enim solum abdomen, uti alias in hoc malo, sed universi jam corporis musculi, brachiorum crurumque præ reliquis, spasmis tentabant dirissimis, ita ut æger e lecto subinde exiliret, si forte extenso quaquaversum corpore eorum vim posset eludere.'

The first of these extracts describes the disease with great accuracy as it, very generally, affected the Natives—the second is well exemplified in Dr Burrill's report as it attacked the Europeans of the 65th Regt. at Seroor." Rep. xxiii.

Now the advocates of "perfect identity" deny that the disease in this country at present, at all corresponds with that of Sydenham; while the Bombay Board asserts that Sydenham's description exactly applies to the cholera of India. See, then, in what a dilemma the party in question is placed. The Bombay Board proves the identity of the *Indian cholera* and *Sydenham's*. The party alluded to, denies that the malady here is at all identical with, or similar to, the disease of 1669! By every law of logic then, and by their own shewing, the Indian and the English epidemics are not "perfectly identical."

To place this dilemma in as concise and clear a point of view as possible. The epidemic described by Sydenham is identical with the epidemic of India, according to the Bombay Board.—The epidemic of India is identical with that now existing in England—ergo, Sydenham's epidemic of 1669, and the reigning epidemic of 1832, are identical. Q. E. D. We defy the advocates of "perfect identity" to extricate themselves from this dilemma, except by denying the

competency of the Bombay Board to appreciate the nature of the disease which was around them.

We think we have abundantly proved that wherever the disease originated, or however it may be produced, the character of it in this country is very different from that which it assumed in India. There it was cholera rather than fever—here it is fever rather than cholera. It is not a little curious that, after all the cry that has been raised about the cholera travelling from India to England, the compliment is now returned by the Bombay Board, who assert that the cholera which scourged India in their day, was the English cholera of 1669!! So that, long as was the time which the malady took to come from the Ganges to the Thames, it must have taken a still longer period to travel from England to Bengal.

These are some of the consequences of adopting the notion that epidemics travel from one country to another, instead of the more philosophical doctrine that the elements of epidemic diseases exist in all countries, and are called into activity, simultaneously or successively, by a cause, of which we have no knowledge, and over which we have no control.

But when we deny the "perfect identity" of the Indian and English epidemics, we do not mean to deny that the same epidemic causes have originated somewhat similar diseases in India, Continental Europe, and England. We only maintain that neither the causes nor the diseases themselves travelled from one country to another; but occurred as much spontaneously in Bombay, as in Bengal—in Persia as in Hindostan—in Russia as in Persia—in Prussia, as in Russia—in Hamburg as in Riga—in Sunderland as in Hamburg—in Glasgow as in Newcastle—in London as in Musselburgh.

In respect to the doctrine of the disease being a *nova pestis*, in any of the countries above-mentioned, the evidence put on record by the Madras Board pretty clearly settles that question in the negative. But we will introduce a document from the pen of Frank, which must silence the most strenuous advocate for a new disease. The document is extremely valuable on many accounts, and bears with intense interest and importance on the present epidemic.

EXTRACTS FROM FRANK ON THE CHOLERA.*

TEXT.

I. "SPORADICE hic morbus sub celo temperato, ac nequidem frequenter occurrit; rarius, interdum EPIDEMICE; calamitoribus in locis frequentius grassatur et quasi ENDEMICUS agnoscitur." 249.

TRANSLATION.

This disease occurs sporadically and not very frequently in temperate climates; sometimes, but more seldom, as an epidemic; in warmer countries, it rages and assumes an endemic character.

II. ON THE CONNEXION BETWEEN CHOLERA AND FEVER.

"Majoris in medicæ artis exercitio momenti divisio est cholera in APYRETIACAM quæ sine febre incedit; et in FEBRILEM, quæ febris legitime, periodicae, et quidem PERNICIOSÆ, plerumque tertiana, symptomata est (febris intermittens cholericæ), ac loca paludosa, calido sub celo, vel maxime infestat; cum prima, ubique frequentius hac ipsa occurrat."

A division of cholera, of greater importance in the practice of medicine, is that into the apyretic, or the cholera unaccompanied with fever; and the febrile, which is a symptom of a genuine, periodical, most commonly tertian, and truly pernicious fever (intermitting choleric fever), which chiefly infests marshy situations in hot climates; the first variety is the more common of the two."

250.

III. DESCRIPTION OF AN ATTACK OF CHOLERA.

"Subito et cum impetu plerumque CHOLERA hominem prehendit. In qui-

The cholera commonly attacks the patient with suddenness and violence. Sometimes

* De Curandis Hominum Morbis, &c. Lib. 6^{ta}, p. 249 *et seq.* Editio Viennæ Austriae, 1807.

busdam eandem praecedunt sensus lassitudinis, stomachi tepsio, dolores, ructus acidi nidorosi, nausea, saliva frequens expusio, abdominis inflatio cum strepitu, colici dolores pungentes. Mox uno impetu et tempore, vel saltem alternatim et vomitus et fluxus alvi effrenes sequentur. Primum aquæ similia, dein, acsi recens caro lota esset—non nunquam alba et nigra—in aliis, quod rarum est, lymphæ modo limpida, et ad frigus coitura,—in multis, primum ciborum reliquæ, postea humores biliosi, plus nimis muco permisti, mox flavi, mox æruginosi, mox fusti, nigri, plerumque acidissimi ac fere corrosivi una cum copiosis iterum ructibus et flatibus, necnon ipso non nunquam cum sanguine, repetitis frequentissimè vicibus, et sub tam subitanea virium prostratione redduntur, ut assumti veneni haud raro subintret suspicio. Ventriculus interea ipsaque intestina mirum contorquent solent in modum. *Vehementissimi illum scilicet cardialgia, cum siti intensa, voce clangosa et rauca, —hæc vero, maxime supra umbilicum ransonis, morsicationis sensus innatit.* Urina in vesica multorum retinetur, aut cerfe urit excreta. Ad aurum, tenesmus urget. Singultus fortiori malo succedit; crurum, surarum, brachiorumque musculi tenduntur, convelluntur; incurvantur digiti, livent unguis, algent extrema, frigido viscidoque sudore obiecta, cum internorum ardore, ac animi deliquis. Arterie jam ante hac contractæ ac minime, pulsationes nunc offerunt frequentissimas, inordinatas, nunc vero a digito vix amplius distinguendas. Vehementiore in cholera, ægroti, ob immensam adeo, ac celerem humorum ex ventriculo intestinisque simili, lacturam, ob crudelice et animi et corporis tormenta, post quinque, sexæ jam horas, faciem vel maxime mutatam, collapsum, et sibi dissimilem ostendunt, atque nisi promptum feratur auxilium, nunc adeo angusto unius nycthemeri spatio, nunc secunda, tertia quartæ die, raro tardius, efflant animam." *In 250. lati in corse de course de la morte de l'homme.*

* The following passage, from Torti, lib. iii. chap. i. will not be uninteresting at the present moment. Speaking of a certain form of pernicious fever, of a remittent type, he observes:

"Circa paroxysmi initium, vehementer contingit, violentaque, ac simultanea excretio sursum ac deorsum humorum vitiosorum, prava insimul qualitate, atque immodica quantitate peccantium, sive sinceri illi sint, sive variegati: quibus nonnunquam vomitibus, ac defectionibus copiosis, et crebris, singultus adjungitur, vox rauca, oculorum concavitus, angor stomachi, pulsus exilis, extremosum perfrigeratio, aut livor:—uno verbo, omnia accidentia quæ cholera[m] morbum comitari solent, &c."

If the above be not a choleric fever, and very analogous to the present epidemic, we are incapable of any discrimination.

we find these premonitory symptoms: a sense of assitude, tension, and pain of the stomach, acid and fetid eructations, nausea, frequent spitting, flatulence and borborygmi, pungent colicky pains. After a time, violent vomiting and purging set in, sometimes together, sometimes alternating with each other. At first the egesta are like water; then as if flesh had recently been immersed in them,—sometimes they are white, sometimes dark, in others, which is uncommon, they are merely a limpid lymph—in many cases, the discharges are, first, the remains of the food that has been taken, afterwards fluids of a bilious character, more or less mixed with mucus, now yellow, now æruginous, now dusky, dark, often very acid and almost corrosive, with copious eructations, sometimes even blood, very frequently repeated, and with such sudden prostration of strength, that not uncommonly a suspicion of poison having been taken presents itself. The stomach, in the interim, and the intestines are convulsed in an extraordinary manner. The patient is affected with the most severe pain at the scrobiculus cordis, intense thirst, a shrill raucous voice, and with a great sensation of gnawing or erosion at the umbilicus; tenesmus is urgent. The urine in many cases is retained, or if passed is hot and irritating. As the disease advances, hiccup succeeds—the muscles of the thighs, legs, and arms are seized with spasms—the fingers are flexed and contracted, the nails are livid, the extremities are cold, and covered with a cold, clammy sweat, whilst the internal parts feel burning, and there is syncope. The pulse, previously contracted and very small, now becomes frequent and irregular, now no longer to be felt. In the worst cases of cholera, the patients, exhausted by the profuse and rapid discharge of humours from the stomach and intestines, and by their cruel torments, mental and corporeal, exhibit in five or six hours a remarkable change in their features, which are collapsed, and no longer like themselves. Unless the patient is speedily relieved, he sinks in the space of twenty-four hours, or on the second, third, seldom later than the fourth day.*

The foregoing extracts will supply the deficiency in the terse account of Sydenham and other writers. Frank's account embraces almost every feature and phenomenon of the epidemic cholera, or rather choleric fever, as described by Asiatic, Continental, or English writers.* But we particularly invite the attention of our professional brethren to Frank's remarks, as to the connexion of cholera with fevers of the intermitting and remitting character, in low and malarious situations. Many practitioners of this metropolis are now perceiving, that the choleric fever of the present period is frequently ushered in with rigors or cold chills, and observes a periodical character, where the first collapse or cold stage does not prove fatal, which is too often the case. Several of them have found that the vomiting and purging recur at certain periods, and that bark effectually stops the paroxysms. This is a point of most vital importance, and we urgently request our brethren to attend to it carefully.

II.

MR. CAMERON TO DR. JAMES JOHNSON.

Royal Hill, Greenwich, March 17th, 1832.

SIR,—Although I have not the pleasure of being personally acquainted with you, I have long known you through the medium of your writings. In 1817, when I commenced the practice of my profession in India, as a young Surgeon in the Navy, the principal guide I had to direct me, was your work on the Diseases of Warm Climates; and I am very happy to say that, by attending to it, my treatment of disease was particularly successful. Influenced by motives of partiality, both on this account, and because your ideas of the present epidemic seem to correspond nearly with my own, I have to enclose for your perusal, first a printed copy of a report which I made, some time ago, to the Commissioners for Victualling His

* Great stress is laid on the nature of the ejected matters in cholera. If the fluids are colourless, it is a proof that the disease is Asiatic—if any bile or other coloured fluids appear, the disease is English. Yet the India Boards, and, indeed, all careful observers, have acknowledged that the discharged fluids form no criterion of the disease. The Bengal Board, for example, tells us that “the fluid ejected from the stomach was watery; mostly tasteless, transparent, or of a whey or ash colour. Sometimes it was sour, green, dark, like infusion of tea, starchy, mixed with mucus, and viscid. In very rare cases, pure bile was thrown up.” In respect to the alvine evacuations, they were “generally watery, colourless, white, or muddy;—sometimes red and bloody, sometimes greenish and pulpy, like half-digested vegetables.” Is it not preposterous, after this, to make the distinction between Asiatic and English disease to consist in the colour of the motions? Nimirum ne crede colori!*

* Mr. Ekin, a learned young surgeon, has pointed out in *Areteus* some passages, which have been erroneously construed by a writer in the *Medical and Physical Journal*. Thus, in speaking of the treatment of cholera, *Areteus* says: “*Haec vero facienda sunt donec stercora per inferiora dejicientur, et superius biliosa efferantur.*” “These means are to be pursued *until* (not “*so long as,*” as has been represented) faecal and bilious matters appear.” This, we think, settles the point as to *Areteus*. This ancient author states the suppression of urine in cholera, and takes pains to account for this symptom.

Majesty's Navy, &c., on scorbutic diseases, and secondly, a copy of a letter I had the honour of addressing to the "Central Board of Health" on the prevailing epidemic. I am aware that I will have much difficulty in establishing the doctrine which my letter treats of, and solely because the nature of scorbutic affections, in their earlier stages, is so obscure, and so little known;—but I feel confident that I shall succeed eventually; though, perhaps, too late. This is a matter of great importance, because the treatment of the disease, called the "ASIATIC CHOLERA" now prevailing in this country, is far from successful; and how can it be otherwise, when a debilitated individual, who has been affected with scorbutic diarrhoea for a week or ten days, with not more than two or three pounds of blood in his system, and while in the highest state of collapse from exhaustion, even in articulo mortis, is subjected to the operation of the lancet, and to mustard or salt emetics?? No medical man ever took the lancet in hand with greater confidence and satisfaction, than I did in the cholera of India; and I shall add, that none ever did so with greater success; but it will not do in the scorbutic dysenteries and diarrhoeas, &c., at present prevailing in this country.

I am, Sir, with much esteem,

Your most obedient Servant,

CHARLES CAMERON,

Surgeon R. N.

(Copy) Upper George Street, Greenwich, March 10th, 1832.

SIR,—Permit me to state to you, that in my capacity of Surgeon in His Majesty's Navy, I have had various opportunities of witnessing the disease in the East Indies, which at present occupies so much of the attention of the public as well as of the profession; and I have to request you will please, should such a step not be informal, or contrary to etiquette, to lay this statement before "the Central Board of Health" for their consideration.

With a view to point out the claims which I have to the attention of the Board, I have to represent that I was on service in India during the years 1817 and 1818, when the cholera was so prevalent in that country, and saw a good deal of the disease. I have further witnessed the cholera in India at two different periods since that time, viz., in 1826 and 1830, and after much attention to its history and character, and having also seen that disease called Asiatic or Indian Cholera now prevailing in London, I have come to the following conclusions—namely:

That the cholera I saw in India, and that which I lately witnessed in London, are not the same disease.

That, the disease now in London, although different in some respects, is of a nature similar to, and arising from the same cause as that which occurred in the Penitentiary in the years 1823-4.

That, although there exists some difference in the descriptions given of the present epidemic and the account of the diseases of the Penitentiary published in 1826 by Dr. Latham, they do not militate against the similarity of the two diseases, but are easily reconciled.

That the disorders of the Penitentiary did, and that the present epidemic does, derive their most formidable symptoms and fatal character, if not their existence, from a scorbutic taint of the system of the patient, caused by improper diet or deficient nourishment.

That although the symptoms or signs of the scorbutic diathesis are so obscure as not to be generally noticed, yet post-mortem examinations of the existing cholera present the same appearances that have been observed in scorbutic diseases affecting the alimentary canal.

As it would, perhaps, be improper, if not impossible, for me to point out in the limits of this letter, the similarity or identity of the two diseases by a

comparison of all the symptoms, I will confine myself to some remarks on the necroscopic appearances only. I feel the less regret in being limited to this point, as most of the advocates for the identity of Indian cholera, and what is so called in this country, have lately abandoned the outworks and have taken up their position in the strong hold of pathology (see *Lancet* of the 25th ultimo, page 775,) to prove that the two diseases are one and the same, and that it is new to England. I will, therefore, take a concise view of the pathological data on which so much stress is laid, and will arrange the principal appearances noticed in cholera, and draw a parallel between them and those observed in the dissection of scorbutic cases where the disease chiefly affected the alimentary canal.

Pathological data, claimed as being characteristic of Cholera.

The intestinal canal pale, without inflammation or congestion.

Black patches in the mucous membrane.

Ulceration of the intestines.

A congee-looking fluid passed by stool, and found in the intestinal canal.

Blue colour of various parts.

Congestion and dark colour of the liver, and occasionally congestion of the brain.

Brown or black condition of the blood.

Pathological data observed in Scurvy, chiefly from the appearances in the diseases of the Penitentiary in 1823-4.

"They" (the patients, says Dr. Latham) "became pale, languid, thin, and feeble."—"Small vascular patches were found in the mucous membrane of the intestines and nothing more."—"The only traces of disease discovered were three or four spots of ecchymosis without any appearance of vascular or inflammation in their neighbourhood."—"Ecchymosis" and "vascular patches" were frequent.

"They" (the morbid appearances of the intestines) "were principally of three kinds, ecchymosis, congestion of the small blood-vessels, and ulceration; the two first belonging exclusively to the mucous membrane, the last beginning in the mucous membrane, but subsequently extending to contiguous parts."

The stools occasionally consisted of "some turbid colourless fluid."—"There was every degree and species of flux that was ever seen or described, from the cholera of India to the autumnal visitant of our own country."

"There were large blotches of an irregular shape, and of such an extent as to leave the legs, arms, thighs, or buttocks, almost uniformly livid, with hardly an appearance of their natural complexion."

"Livid or blue," it is worthy of remark, is a term used by Dr. Latham.

"Upon dissection we found the vessels of the brain slightly turgid with blood." (This patient died apoplectic; and of course congestion of the liver will take place when the disease, as it generally does, assumes a congestive character.)

All writers on scurvy have described the blood as of a brown or black colour, and I have no hesitation in saying, from much experience, that this is the *origo mali*—the very essence of the disease.

I have thus endeavoured to point out the identity of the pathological appearances observed in the present epidemic, and in the scorbutic disorders of some years back, from Dr. Latham's account of the diseases of the Penitentiary; and I think I have mentioned every fact in this department which those who advocate that cholera is a disease *sui generis*, and new to this country, will esteem of any importance, with the following exception.

I take it from the description of Moreau de Jonnes, and it seems to be the "pearl of great price." "The most striking peculiarity is," says he, "on the entire, the existence in the alimentary canal of an argillaceous substance, apparently deposited by the turbid fluid already mentioned."

On this subject Dr. Latham has not, perhaps, been so clear as on others, but he mentions that the stools sometimes consisted of "some colourless turbid fluid." It is evident, therefore, that he saw the colourless turbid fluid, although he does not, I think, take any notice of the "deposit." It is to be remembered that the Doctor was describing a disease that was new to him, and that many who have written on cholera have taken no notice of this argillaceous deposit. Add to this that he has stated that "there was every degree and species of flux that was ever seen or described from the cholera of India," &c.

I think I have now pretty clearly pointed out the affinity of the two diseases, without at all drawing upon the resources derivable from my own experience of either; and I wish it to be understood that though I have, for obvious reasons, preferred to derive my arguments from the "account of the diseases of the Penitentiary," it is not by any comparison of that account with the description of the present epidemic, that I have come to the foregoing conclusions, but from my own knowledge of cholera and of scurvy in various parts of the world. I trust I may now, therefore, be permitted to observe that I have repeatedly seen this argillaceous deposit, resembling chalk and ground spermaceti moistened with dirty water, in the stools of persons with scorbutic dysentery or diarrhoea. In the very last case of the autopsy of scorbutic dysentery which I witnessed, on the rectum being removed for facility of investigation, a considerable quantity of liquid escaped from it resembling curdled buttermilk, or the semi-fluid part which is sometimes observed on opening a new-laid egg, but less white.

Possessing due confidence in the general correctness of these views, it is my intention to write them out in such an extended form as may render them fit to be submitted to the consideration of the profession, but I considered it was my duty to lay them in the first instance before the Board of Health, even in this crude shape, and without delay.

I have the honour to be, Sir,

Your most obedient servant,

CHARLES CAMERON,

Surgeon, R. N.

W. Maclean, Esq. Secretary, &c.

Central Board of Health, Whitehall.

III.

MR. DOBSON ON THE EPIDEMIC CHOLERA OF LEEDS, 1825.

I HAVE been induced to submit to the public, the few following observations on a disease which prevailed in the North of England, during the summer and autumn of 1825; in consequence of the remarks which were made by Doctor Johnson at the last meeting of the Westminster Medical Society, relative to the subject; I should not have obtruded any remarks of mine, but from the conviction that they might assist in elucidating, more clearly, the bearings of this

mointous question ; which is so much occupying the attention of the profession and the public ; and having had a very considerable share of the cases, *at that period*, under my own observation ; more especially of those which occurred to an alarming extent in a small village named '*Gawthorpe*'.

The facts which I shall present may tend to show how far the disease which prevailed in 1825, resembles the one which now exists in London and its vicinity. I need merely mention, *in limine*, that the 'common English Cholera,' always prevails to a greater or less extent during every Summer ; but few cases terminate fatally, and these only amongst the aged or debilitated. But in the Summer and Autumn of 1825, the cholera presented so many entirely new features, such anomalous and unaccountable symptoms, that the medical men were alarmed at the aggression of so appalling a disease. Nevertheless, as the disease progressed, the alarm, in a great measure, subsided. The most energetic measures were adopted, not to arrest the progress of its ravages, but to relieve the anguish of the sufferers. Prophylactic measures were a secondary consideration. 'Sufficient for the day was the evil thereof.' Every day new victims were immolated, or suffered from its ravages. Day after day, new cases presented themselves ; but no one knew why or wherefore. Some considered it contagious, and secluded themselves ; others did not fear. Friend visited friend, and neighbour assisted neighbour, with assiduous attention. Human interest gave way to human sympathy. It was not before the middle of Winter, that the disease disappeared ; and when the means of subsistence, and health, re-occupied the cottages that had contained nothing but wretchedness and disease.

Language is inadequate to depict the distress which prevailed ; for to conceive it, it should have been seen. The disease presented itself under various forms ;—and perhaps the best arrangement that can be adopted, will be to consider it under the three divisions which it alternately represented, viz.—Cholera, Diarrhoea, and Dysentery. But it seems imperative, previously to doing so, to make a few cursory allusions to the season of 1825 ; the nature of the locality where the disease occurred ; and the characters of the residents. These I shall quote from the very excellent pamphlet recently published by my excellent friend and former preceptor, Mr. Thackrah, of Leeds. "In May, 1825, 3-8ths more rain fell than the usual quantity ; and the wind was east nearly the whole month. In June, the weather was showery, and, on some days, particularly sultry ; on the 12th, the thermometer reached 87 degrees ; the wind was variable ; but principally west. In July the weather was sultry, barometer high, winds variable, and the quantity of rain particularly small, not exceeding 1-5th of the usual quantity. About the 3rd of August, the drought which had prevailed for several weeks, was relieved by refreshing showers : during this month the quantity of rain exceeded the average, the weather was sultry, the barometer low, and wind generally west."—p. 24-25.

"*Gawthorpe*, four miles west of Wakefield, on high ground, and almost destitute of wood, is inhabited chiefly by weavers, who, though not generally poor, are dirty in their persons, and have their houses more than commonly filthy, and ill-ventilated. Few, if any, persons above the lowest class live in the village. As there is no public well, the water drunk is obtained chiefly from ponds. 'Of 70 houses which we examined *seriatim*, only 17 had been exempt from cholera and dysentery.'"

The above refers, I believe, to the month of September, when I accompanied Mr. Thackrah to see the patients. They were, at that time, about 30 in number. Not one house, when the disease ceased had been exempt, as far as I recollect.

In May and June, cholera appeared under its usual form. A great number of individuals were attacked, but few died. The symptoms were such as appeared in the common cholera, therefore need not be specified. But in July and August the disease assumed a more aggravated character. The mode of

attack, and the progress of the disease, differed from the preceding cases, and the result was more fatal.

A person would be suddenly attacked at work, or on returning to his home, or in bed, with pain in the abdomen, particularly around the umbilicus, purging almost immediately ensued, first, of common feculent matter, but the intestinal contents being soon evacuated, then followed watery, or mucous stools, with excruciating tortures before each evacuation, continual and urgent calls to stool, and painful tenesmus: If appropriate remedies were at this stage promptly applied relief was generally obtained. Some cases, however, baffled every endeavour to even mitigate them; while others admitted of temporary relief; but soon the disease would re-appear, and with augmented vigour. The most alarming prostration of strength would come on, with vomiting and purging of large quantities of fluid, resembling gruel or barley water, occasionally of the colour and appearance of a solution of mashed peas: cramps of the legs, and sometimes of the arms; intense spasmodic contractions of the abdominal muscles: pulse quick, and often imperceptible, skin cold and clammy, sometimes confined to the extremities, at others extending over the whole surface, countenance vacant, face of a most ghastly aspect, eyes sunk in the orbits and motionless, the eyelids and around of a purple, or more correctly of a leaden hue, lips purple, the face, even of a young and plump individual, became contracted like to the face of a toothless old man in a few hours: the patient would lie on his back with the extremities extended, the arms lying by his side, the skin of the fingers corrugated and the cellular tissue beneath exceedingly dense, in short it was like the hand of the dead: respiration slow, labouring, and imperfect. Brandy, opium, ammonia, and every stimulant that could be suggested, in conjunction with artificial heat and friction over the body would fail to resuscitate. In the course of a day, or often of a few hours, death would result.

In other cases the complaint would suddenly appear in all its malignancy, without any premonitory symptoms. The patient would sink in two or three hours under accumulated agonies, without even the slightest re-action taking place.

During the autumnal months the disease still prevailed, but it was now almost invariably ushered in by prostration of strength, severe diarrhoea, and typhoid fever; these generally existed for a few days before the more urgent symptoms appeared; vomiting only when fluid was taken, or at least seldom otherwise, and then only what had been previously swallowed. The intestinal secretion changed its character, from a gruelly fluid to a soft gelatinous mass, or to mucus streaked with blood; sometimes it was like the washings of meat, large flakes of lymph floating in the liquid; frequently scybalæ of the size of a walnut. Previous to dissolution discharges of blood took place from the bowels to a considerable amount. The amount of discharge from the bowels, of whatever kind, was almost incredible. The most prominent typhoid symptoms marked the disease throughout its continuance, Death in general ensued on the fourth or fifth day.

The treatment of cholera consisted of the application of heat to the surface, brandy and ammonia, and opium in the dose of two and three grains in a pill. Tincture of opium could seldom be retained on the stomach, nor even brandy, in many cases. One circumstance I find noted in my manuscripts, and one which was always observed, that fluids constantly provoked vomiting, and therefore were strictly prohibited in every case: considering them as irritants, which when applied to an already irritable and excited organ necessarily increased its irritability.

DIARRHOEA.

The next consideration is the diarrhoea which existed unconnected with cholera.

Diarrhoea during this season was very prevalent; in short, few individuals who resided in 'Gawthorpe,' or who visited the sick there, were exempt from it. It arose frequently without any obvious or assignable cause; occasionally it was traceable to indigestible food.

Frequent purging; griping pains in the bowels, especially before each evacuation; the characters of the dejected matters were analogous to those observed in the cholera cases. Extreme debility; typhoid fever; cold extremities; rigors; tenesmus. Relief could sometimes be obtained in a few hours, especially if aid was had soon after the occurrence of the attack; but if deferred for a few days, the complaint would continue for weeks, or even months; and resist every means. Three individuals in one family, and many others, had diarrhoea for months afterwards; particularly when they had hot food or drinks, which used to pass the bowels unchanged: these, during the progress of acute cases used to be prohibited, in consequence of the irritation they induced in the bowels.

Diarrhoea, though not so distressing to the patients as cholera, caused in the minds of friends considerable alarm; and knowing it to be so common a precursor of cholera, medical aid used to be procured as early as possible after the commencement of the attack. Not many deaths ensued in this form of the disease.

The remedies for diarrhoea were simple and generally efficient; 3 or 4 grains of calomel with one or two of opium, in a pill, were given every four hours, until the spasms and the purging ceased; followed by a dose of oleum ricini, or tinct. rhei. If the disorder relapsed recourse was again had to the calomel and opium, conjoined, perhaps, with an aromatic cretaceous mixture.

DYSENTERY.

Many of the cases of diarrhoea which, when continued beyond the fourth or fifth day; especially when medicine had not been taken, resolved themselves into severe cholera or dysentery; when the latter, there was an enormous discharge of blood from the bowels, pints, nay quarts in a day were discharged; sometimes pure uncoagulated blood, at others commixed with a known watery fluid, sometimes with a fluid like the washings of meat. Scybala of a large size were often passed. Most distressing tenesmus. Pain at the transverse part of the arch and the sigmoid flexure of the colon. Typhoid fever of a most malignant character. Delirium; suffused eyes; headache; brown parched tongue; sordes on the teeth; quick pulse; involuntary discharge from the bowels; retention of urine. In one case, that of a woman about 30 years of age, the most distinct petechiae and buboes appeared a few hours previous to death. A large majority of those cases terminated fatally.

Dysentery required the most energetic treatment. Six or ten grains of calomel, with two or three of opium, were exhibited every two or three hours until mercurial action was fully established: when the mouth could be freely affected the disease began immediately to subside, and recovery took place. This is, I conceive, a very valuable practical fact; unfortunately it was not until the latter period of the epidemic that this practice was enforced—when experience, negative knowledge, had proved the inefficacy of small doses of medicine. General bleeding was seldom resorted to; never unless there were marks of decided peritoneal inflammation: only once or twice, I believe, was the lancet used. Leeches at the seat of pain, and hot fomentations were of service. A ball of solid opium placed in the rectum relieved the tenesmus. For the head affection, blisters, &c. But after every effort and attention death frequently resulted. The disease would appear arrested, but after a short respite, would come on with increased vigour. *Ten corpses* lay in the village at the same time.

I may mention, that in Gawthorpe there were a few cases of typhus fever,

without vomiting or purging. In some of the *fatal* cases, however, diarrhoea preceded, and hastened death.

Should these few cursory observations afford any interest to the members of the Westminster Medical Society, the author will be amply repaid.

W. DOBSON.

9, Belgrave Street, South, Pimlico.

We beg to draw the particular attention of our brethren to this most important document, which, in connexion with the extracts from Frank, and the observations of Dr. Brown, of Sunderland, contained in our last number, will clearly shew the intimate relation that subsists between fever and epidemic cholera, so called.

If any one can doubt, after the papers presented in this number of our Journal, that diseases greatly analogous to that now epidemic in the metropolis, did occur in England previously to 1831, he must be very sceptical indeed. As doubts have been thrown on the accuracy of Mr. Thackrah's delineation of the Leeds epidemic, as seen in our Review department, we are happy to give the testimony of Mr. Dobson, as to the scrupulous fidelity of Mr. T.'s narration. *Ed.*

IV. 2 10 00

OBSERVATIONS ON THE HISTORY AND TREATMENT OF CHOLERA ASPHYXIA, AS IT HAS APPEARED AT HADDINGTON. By ROBERT LORIMER, M.D. and JOHN BURTON, M.D. Secretary to the Medical Board, 8vo. pp. 64, Stitched. Edinburgh, 1832. Price Two Shillings.

PAMPHLETS on Cholera are crowding upon us, and nothing but Cholera is read of, talked of, written of, or dreamt of in the medical world. Our readers will find a very valuable body of evidence and opinion on the subject in the present number of this Journal, and we hope, if the pestilence spares ourselves, to exhibit a complete picture of its progress and character in this country. We have this month shewn it as it appeared in the Presidency of Madras, in Hindostan, and portrayed its features at Sunderland, Newcastle, Gateshead, Hillhead, and Musselburgh. We are now to display it at Haddington.

On referring to Brookes's Gazetteer, we find that this Borough is sixteen miles East of Edinburgh. Its population was 4,370 in 1811, and 5,255 in 1821, an increase of nearly a thousand in ten years. Supposing that the increase has proceeded at the same rate, and it ought to advance at a greater, the population at present will amount to upwards of 6,000. The cholera commenced in the place on the 17th December, 1831, and on the 23rd of February 1832, the total number of cases was 125, or 1 in 48; the total of deaths 54 or 1 $\frac{1}{2}$ in 111. Of the 54 persons who died, 22 were men, 30 women, and 2 girls. Of the 125 who were attacked, 50 were men, 66 women, 1 boy, 8 girls. The female sex has hitherto suffered much more than the male in this country.

We are pressed for space at this late period of the quarter, and must confine ourselves strictly as possible to the enumeration of facts. They will speak for themselves.

"The town of Haddington is situated on a plain about a quarter of a mile square, bounded on the south and east by the river Tyne, having its course eastward.

"The elevation of the town above the level of the sea is somewhat under 100 feet, and the whole surrounding country, except on the river-side, rises from it as a centre. The streets in the town are wide and airy, but there are numerous sections by lanes, which are ill-ventilated and filthy.

The suburb of Nungate, irregularly built, also abundantly filthy, ill-ventilated, and inhabited principally by the poorer classes, is on the east side of the river, (about one-hundred yards wide here,) and the line of communication is by means of a bridge, the water being pent up by a mill-dam running across from that part of the town in which the disease first appeared, to the Nungate side.

It is worthy of remark, that the refuse of three tanworks, the town slaughter-houses, and two common sewers, intersecting the town, is discharged into the river at or near this place.

The Cholera made its first appearance in Haddington on the 17th December, 1831; and, after a few straggling cases, between which, with one exception, there was no communication traceable, it became general; confining itself, however, more particularly to the eastern districts of the town, and to the suburb of Nungate.

The first patient was a confirmed drunkard, and had been exceeding in the use of ardent spirits more particularly for the two days preceding his attack. His residence was in a steep narrow lane, leading down to the river, in the vicinity of the slaughter-houses, and forming one of the avenues to a tan-yard and bone-mill, where there was a large dépôt of bones, &c. gathered from the surrounding country, and not imported from Hamburg, as was reported at the time. If filth, dissipation, and the combined influence of many causes acknowledged to have a direct effect in depressing the vis vitæ, can, without the agency of contagion in its true sense, produce Cholera Asphyxia, we think it will be allowed that they had full scope for exercising their power in this case; and, as there was not the most distant probability of the man having come in contact with any one labouring under the disease, or from the infected districts, we may certainly be justified in concluding, that the first case in Haddington was sporadic. The assertion that the disease was 'brought from Newcastle,' is too vague to have deserved notice, were it not that, through the public press at the time, it was asserted, with much confidence, that three shoemakers were the unhappy medium of conveying this malady. If this were the case, the men must consider themselves more than fortunate in having escaped the addresses of their unsparring fellow traveller. The truth is, the three persons alluded to, named Frazer, Gow, and Walker, left Newcastle, on the 9th or 10th of December, travelling on foot, resting eight nights on the road, at different stages, and arriving in Haddington *after the first case had been ill for twenty hours*. They never saw the man, they had never seen a case in Newcastle, have never been attacked themselves, nor have they communicated the disease to any of their families or neighbours."

Having seen how the disease commenced it becomes necessary to inquire next how it subsequently extended.

"As already remarked, the first case appeared on the 17th December; the second (on the 25th) a girl, æt. ten or twelve, of a delicate constitution, who lived in the neighbourhood of the first. She had no communication with him, or the inmates of the house in which he resided, but had been exposed for some time in a thin dress, on the evening before her attack, which proved fatal in a few hours. The house in which she lived communicated with the entry to the tan-yard, was damp, ill ventilated, and inhabited by her father, mother, and numerous family, all of whom were more or less exposed to the influence of contagion, had it existed; yet not one of them had the disease until the 3d of February, when the eldest daughter, æt. 18 (who, from her occupation as a straw-hat plaiter, was necessarily much from home in another part of the town), was attacked, and fell a-victim to it. The family were thus again exposed to the risk of infection; but, up to this date, remain well, although no separation of the healthy from the sick was practicable from the limited extent of their dwelling, and no means of prevention have been used except whitewashing the house and washing the bed-clothes.

The third and fourth cases were women living in the same tenement, but in different apartments. Their house is situated in one of the dirtiest closes in the town (leading also to the river), about 150 yards from the residence of the last case. They both fell victims to the disease, without communicating it to any of the numerous visitors led by curiosity to see them during their illness, and after death. The husband and niece of one of the women removed to the family of a brother-in-law, *who was much engaged with them in attending their relation, and in cleaning the house, &c after her death.* Four or five days after being thus exposed to the influence of all the causes producing the disease in his wife and her neighbour, the husband was attacked in the house of his brother-in-law; and, on the same day, the niece and brother-in-law, *who also were exposed to the same causes in the poisoned locality.* The husband perished in six hours and a half; the niece and brother-in-law recovered; the girl, after a dangerous illness of three weeks. Here, let it be remarked, that none of the brother-in-law's family, in which they were ill, or the families in the tenement in which they lived, have been attacked, although nothing whatever has been done towards fumigating or whitewashing the house.* Owing to the long illness of the girl, it was not practicable to remove her for that purpose, and, since, it has been overlooked.†

Isabella Macleish, mother of case first in Appendix, died in a house in the Nungate, on the opposite side of the river from the close in which the third and fourth cases died. *She was a most dissolute character, and had no communication with any of the previous cases.* Three other women of similar habits, living in the same tenement, were subsequently attacked and died. Macleish's two children, and a child of one of the other women, had also symptoms of the disease; but none of the other inhabitants of the tenement have been attacked. One of these is an old man, with cancer in the throat, and a debilitated constitution, living in the story immediately above the rooms of Macleish and the others.

George Patterson and his daughter, also residing in the Nungate, though at some distance from these cases, took the disease on the same day: he died of it, the girl recovered; *but none of the family (though they all slept in the same room) have been attacked.*

Mrs. Robertson, also in the Nungate, on the outskirts of the suburb, died of cholera, and, though she was surrounded by a numerous family, none of them have taken the disease. Many similar instances could be adduced among the lower classes. Let us now, however, view the course of the disease among the more respectable inhabitants of the town.

After a remission of the disease for nearly eight days (which took place upon the return of soft weather), we had a renewal of it (with great violence during two or three days) following a gale of wind from the north and east, with rain and snow. In this attack the better classes were its principal victims. In their families, the disease has been confined entirely to those first attacked, they being predisposed to it in almost every instance, and contagion here is altogether out of the question.

One of the first of these cases was that of Mr. S. who had been subject to disorders of the stomach and bowels for some years. He died in the midst of a numerous family. Mr. A. also fell a victim to the disease, surrounded by his family. Mr. M. was attended by his mother, sister, and servant. Mrs. A. and

* "For three days after the husband's death all his bed-clothes remained in a heap at the side of the bed, *to which the niece was removed immediately after her uncle's death;* and in the same room (ten feet square) a family of eight or ten individuals resided."

† "A case occurred in the tenement on the 17th February."

Miss C. also died of cholera, and in none of their families have there been any farther spreading of the malady. So much for 'contagion' in this town. Its influence has not been more perceptible in the country, as far as we have had access to it.

The case at Beanston Mill was truly a sporadic case, the subject of the attack being a poor woman who had neither been in Haddington, nor had any communication with any person from that place since harvest. She died of the disease after reaction had commenced. During her illness, she was well attended by several of her neighbours, besides receiving casual visits from many more. Not one of them has taken the disease except her mother; this case being in its results a farther proof of the limited influence of contagion, although at first sight it appears like a confirmation of its virulence. The woman, after a residence in the house of her daughter for about forty hours, returned home to the village of Athelstoneford, about two miles off, and was attacked with cholera on the second day after her return. She had visited the poisoned spot and received the disease (when attending a patient?) she did not communicate it to any one in Athelstoneford, which she probably would have done had it been contagious. There was another case in the village at the same time, between which and the old woman there was no communication. None of the attendants of either have been since attacked.

The case at Knowes, six miles east of Haddington, was similarly a sporadic case. It is rather remarkable that both these cases are on the banks of the Tyne, and the general situation of both resemble that of Haddington. The poor woman who was the subject of the attack lost her life, but none of her neighbours, or her attendants, have been seized.

There was one case at the village of Whittingham, in which the disease did not spread, and two cases at Bees' Knowes (about two miles distant from the latter), which had no intercourse with each other, although the other inhabitants of the hamlet had free communication with both, with impunity! At Ruchlaw Mill, also in that neighbourhood, there was a fatal case, which was not interred for three days after death. During his illness, and until he was interred, some of his family and friends sat up night after night in the house, and have not been attacked.

A young man, named Hardy, who had been working for a week in Tranent during the prevalence of the disease, to its greatest extent in that place, came to his home at the village of Gladsmuir, and took the disease, but did not communicate it to his family, who are known to be highly predisposed.

A woman, who was afterwards the subject of our first galvanic experiment, left Tranent while labouring under an attack of diarrhoea, travelled on foot to the village of Samuelstone, became collapsed there, and was removed in a cart to Haddington. None of the people who saw her, and assisted in removing her, have taken the disease.

Two of the servants of a gentleman's family, about seven miles east of this, took the disease, having had no previous communication with any of the infected persons or districts; they both recovered, and the disease has not spread in the family nor neighbourhood. There was also one case at the village of Whitekirk, in which the disease has not spread.

The disease has not attacked the village of Linton, five miles east of this, although the inhabitants are in daily communication with all the above places. It prevails at West Barns, four miles farther east. It has not attacked Belhaven nor Dunbar, both within two miles of West Barns."

The natural comments on, and corollaries of the foregoing facts, will suggest themselves to the minds of men of reflection, habituated to exact reasoning. We have not space for any.

"The disease, though it be admitted to have travelled down the river (as has

been alleged), has not as yet ascended its course, nor have any of the inhabitants of high grounds around the infected localities been its subjects.

It is remarkable, that, in its progress, very few instances of the disease have occurred in persons perfectly healthy; they, to a certain extent, appearing to enjoy something like immunity, from the severer symptoms at least; the aged poor and laborious, the dissipated, with those subject to disease in the digestive organs, and whose minds were weakly constituted, being among its earliest victims, and almost invariably experiencing the severest attacks."

The management of the preliminary stage of diarrhoea was generally easy, but almost all the patients seen for the first time during the stage of collapse perished. This, we fear, is too generally the case.

"The modifications produced in this disease by atmospheric changes open a wide field of enquiry, and we are sorry that our limited opportunity does not enable us to say much on this head. The accession of the disease here was during a hard frost, with northerly and westerly winds; and, on the other hand, mild weather, with south and west winds, prevailed upon the first remission;—increasing tenfold with severe weather and north-east winds, and now again decreasing with south and south-west and frosty nights.

The diet of the poorer classes in this town and neighbourhood consists principally of vegetable matter, and the use of ardent spirits is more or less general in the same class. Nearly all the medical attendants here were more or less, affected with a peculiar uneasy feeling in the abdomen, sometimes amounting to tolerably sharp pain, and these feelings seemed to be increased, after an attendance upon the patients for any length of time in their own dirty and ill ventilated dwellings.

The disease among the poor has decreased both with regard to the number of cases, and the severity of the symptoms, since the establishment of a soup-kitchen, and clothing dépôt. We mention this as a fact, without, of course, pledging ourselves to account for it."

The most common premonitory symptom was diarrhoea, varying in duration from a few hours to several days or even weeks, before the more violent attack. The following proved the most successful treatment.

"Diarrhoea with or without griping pain in the bowels, often yielded to a dose of castor-oil, or one or two mild doses of rhubarb, magnesia, and ginger, with rest and warmth, and a duly regulated diet. In some cases, an opiate preceded the exhibition of the aperient, and with decided advantage. When the diarrhoea was attended with frequency of pulse, heat of skin, and even a certain amount of collapse in the features, shewing the livid areola about the eyes, a small bleeding has been often practised; and as an effect, the patient generally says he 'feels lighter,' though not previously sensible of any particular depression. One grain of opium, with three or four of calomel, repeated in a few hours, according to circumstances, was next administered, and followed up, after a proper interval, with castor-oil, or divided doses of the compound extract of colocynth with rhubarb.

The purgatives required repetition for several days, till the alvine evacuations, thinner and darker than natural (sometimes pitchy), regained their usual appearance. The diet was of course mild and moderate in quantity, and the patient kept constantly in bed."

Galvanism was tried in several cases during the stage of collapse. In all but one some sensible effect was produced.

"The results might have been more satisfactory than they were in cases 21 and 22, if a battery had been used instead of a single trough of *sixty* plates; and if the trough itself had been in a state of more perfect order. But, so far as the results go, it appears reasonable to conclude, that, with a more perfect and powerful apparatus, and more vigorously constituted subjects than those operated upon, a greater and more permanent benefit might be obtained."

Twenty-three cases are related, the last a very curious one as illustrative of the effects of the galvanic power. Our limits, however, compel us to stop. We think the able authors of the present pamphlet deserve great credit for coming forward as they have done. Let the chief practitioners of every town or district where the cholera prevails, investigate with the utmost care the cases that they witness, and when the pestilence is gone by, let the results be published for the instruction and benefit of the community. We do not recommend every surgeon and physician to write a pamphlet. God forbid. Perhaps the best means of arranging and finally of giving to the world the results of their observation and experience, would be for the medical practitioners of the place where cholera springs up to form an association between themselves.¹⁸ This association should constitute the focus to which all individual reports should be directed, and from which a joint report should ultimately spring.¹⁹ The whole should be on the model of the Indian reports, the best that have ever appeared upon any epidemic. We would state most explicitly that the association should not be made a job; it should be open to each and all.

HISTORY OF THE PROGRESS OF CHOLERA (CHOLERIC FEVER) IN ENGLAND.

With the view of putting on record something like a connected view of the history of the epidemic in England, we have committed that task to the hands of a gentleman well qualified to perform it. But as we have left him at liberty to embrace any tenets or doctrines which he pleases, so we hold ourselves entirely free from responsibility on any points of speculative reasoning which may be broached in this history.—ED.

During the latter end of the Summer and Autumn of last year, bowel complaints under the form of diarrhoea, and cholera, had been very prevalent at many places throughout this kingdom. The very great severity of many of the cases of cholera, an unusual number of which proved fatal in the short period of 38, 24, or even 18 hours and less; gave rise to alarms that the scourge which had been devastating the Continent of Europe had appeared in this country. At Port Glasgow, Leith, Hull, and Margate, these reports were successively raised; whilst in many other places, the existence of the same diseases was passed by unnoticed. Such was the case in Sunderland and its neighbourhood, where this epidemic first appeared in all the continued malignity and extensive prevalence by which its progress in other countries has been marked.

SUNDERLAND.—On the 26th October, a man of the name of Sproat who resided at Long Bank in Sunderland, died of the cholera:—he was about 60 years of age, a labourer, and had suffered under slight diarrhoea for several days before his death. About half an hour after the death of this man, his grand-daughter was taken ill, and the next day her father; both were removed to the hospital, where the girl recovered, and the father died on the 31st. On the same day also died, a keelman of the name of Wilson in High-street, and a shoemaker named Rottenburg, who lived in a low and confined house on the Monk Wearmouth Shore.

On the 1st of November another death occurred, that of a nurse at the infirmary; who had assisted in removing the dead body of the younger Sproat from the ward of the hospital, but who had not attended him during his illness. Subsequently to her having assisted in carrying the dead body, she was seized with extreme alarm respecting cholera, and the danger of being infected by the dead body. She died in six hours after the first attack. From the first to the 5th of November, no other case was noticed. On the latter day one case occurred; and on the 6th and three following days, the disease became very prevalent, 26 persons were seized, 14 of whom died. It continued to rage in Sunderland, with fluctuations in the degree of its severity; declining for a few days,

and then again, for a like period, increasing until the third week in December; when the number of fresh cases diminished to rather less than one third of the previous average: from the 26th to the 30th, but five new cases are reported, and from that time the disease may be considered as having nearly ceased in this town. Up to the 24th January, but six new cases having occurred at distant intervals; this town then remained free from any case of sufficient severity to be reported cholera until the 8th of March. On that day two new cases occurred. The total number of cases reported up to this time are 538 and 207 deaths.

We have to remark, that the number of cases and deaths, has not been accurately reported; especially in the early part of the time. It became a matter of interest to the inhabitants, to conceal the presence of the disease amongst them, from the injury their commerce received by the quarantine regulations imposed under the belief that it was contagious, and to such a pitch did this public feeling rise at one time, that the reporters of the first appearance of the disease, were in danger of personal violence from the mob, if their names could have been ascertained; and many surgeons to ingratiate themselves with their townsmen, were charged with concealing and misrepresenting the nature of the cases which occurred.

Up to Nov. 10, the severest cases only were reported. From the 11th to the 21st, they attempted to conceal the nature of some of them under the name of common cholera, and even of diarrhoea; but after the 21st, the column for diarrhea was discontinued, and after the 26th, that for common cholera also. All those cases of the diseases of the season, which did not greatly surpass the ordinary severity of diarrhoea being then altogether excluded. It is greatly to be regretted that some correct classification of the cases according to their severity, was not subsequently attempted: for a knowledge of the proportions which the different forms of these disorders of the alimentary canal bore to each other, together with the observation of the circumstances under which each occurred, would in a great measure have enabled us to ascertain the causes of the disease.

Nevertheless, that cases of diarrhoea were more prevalent than those assuming the milder or severer forms of cholera, we learn from the comparison of the mortality during these 11 days with that of all other subsequent periods. Thus from the 11th to the 21st of November, of cases under the head of common and malignant cholera, we have 85 new cases, and 33 deaths; and under the head of diarrhoea, 111 new cases and 4 deaths; for the first period of 11 days after the 21st of November, 126 new cases, 49 deaths; for the second, 105 new, 51 deaths, and for the third, 73 new cases, 39 deaths. Now taking the mortality of the first period at one third, being the lowest proportion reported, and adding 12 of the diarrhoea cases to the column of cholera, as all that could have been erroneously reported, the proportions will be 97 cholera, 99 diarrhoea, the latter still preponderating.

We extract the following interesting observation, on the Statistics of Sunderland, from the work of Mr. Parsons.

"The town of Sunderland consists of three parishes; viz. Monk Wearmouth, with a population of about 6,000,—Bishop Wearmouth, with 14,000,—and Sunderland with 20,000 inhabitants. In Bishop Wearmouth nearly all the wealthy inhabitants of the town reside, and the number of its pauper population is very small; the streets are generally sufficiently wide and clean, and their elevation above the level of the River is from 110 to 120 feet. In Sunderland, which is a continuation of Bishop Wearmouth, there are very few streets of proper width, and their general elevation above the level of the River is from 70 to 90 feet lower than in the adjoining parish. The bye-streets are extremely narrow, several not being broad enough for the passage of a common cart, and during my residence in the town they were rarely cleansed from the dirt, and other impurities allowed to accumulate in them, for many days together. The houses in these bye-streets or lanes commonly had no yards or courts attached to them; the rooms were dark, ill ventilated, and dirty; the passages and stairs were dirty through the great number of persons living in each house; and very often each room, from the cellars to the attics, was occupied by a whole family:—Dr. Barry found 120 individuals living in one of these houses. In the parts bordering on the River, Monk Wearmouth closely resembles Sunderland in the crowded state of its poor inhabitants. For several years past it has been the custom in Sunderland for the parish managers to contract with some individual for the maintenance, &c. of the whole poor of the parish. When this plan was first adopted, now about seven years since, the annual expence for

this purpose amounted to upwards of £9000, the number of persons contributing to the poor-rates being at that time, as it is at present, rather more than five hundred, and consisting almost entirely of the shop-keepers and others necessarily resident in the place; but, by means of the farming system, the annual expence has been gradually reduced to its amount in the present year, of between three and four thousand pounds, with, it is believed, a considerably increased number of claimants on the parochial funds. A necessary consequence of this cruel economy, was the state of great destitution in which the poor existed at the time of the appearance of Cholera amongst them; and, although much was done towards improving their condition, by giving them clothes, bedding, fuel, &c. still it was found that individual exertions were manifestly unequal to counteract the ill effects, on the public health, of extreme and widely diffused poverty, and its too frequent consequences, a neglect of cleanliness, drunkenness from the immoderate use of ardent spirits, and the gratification of other depraved propensities. The death, by Cholera, of Mr. Middlebrook, the late contractor for the poor, has released the parish from its engagement to him, and the system of farming the paupers is now, though late, abolished." 10.

The ravages of the disease were chiefly confined to the parish of Sunderland; in Bishop Wearmouth, which contains at least one-fifth of the whole population, but only a small portion of the pauper inhabitants of the town, a few cases occurred in the middle of November, and again in the beginning of December; but up to the 12th of that month the number of deaths in this parish did not exceed 20. In the parish of Monk Wearmouth but few cases occurred, not more than 15 deaths having taken place from the disease up to the same date.

With regard to the parish of Sunderland itself, the disease was almost exclusively confined to the low, dirty, and confined lanes in thickly populated districts, not more than 12 cases having occurred in the upper and more widely-built portion, although the freest and most unrestrained communication existed with those places where the disease raged.

It was strangely at variance with all preconceived ideas on the subject, that this disease should remain so long confined to Sunderland, although restrictions on the inland intercourse, between the inhabitants of the town and surrounding country, were not imposed; and those who had expected that its progress there would be in proportion to the rapidity of communication between the different towns of this country, began to entertain the delusive hope that its ravages would not extend further.

Although one case had appeared at Newcastle as early as the 26th October, and five between the 28th November and 9th December, it did not prevail extensively here until after the 10th of this month, and about the same time it broke out in various parts of the surrounding country. In the neighbourhood of Newcastle, Walker Township and Colliery were now affected, together with Sedghill, New York, and Wideopen Collieries. Along the Coast it appeared at Blyth about seventeen, and at North Shields about seven miles north of Sunderland, and at Seaham, a small fishing port about four miles south. There were rumours of its having occurred also at Alnwick and Chester-le-Street, although not noticed in the official reports. It also appeared about this time in the extensive parish of Houghton Le Spring, on the south bank of the Wear, between Sunderland and Durham, and on the 17th December at Haddington, in North Britain, 105 miles distant from Newcastle. It now becomes a matter of extreme difficulty to trace its subsequent progress with any degree of accuracy, owing to the irregular manner in which it spread over the country, and still greater irregularity with which its appearance at most places is reported.

Whilst extending along the south shores of the Frith of Forth from West Barns to Edinburgh, it also continued to affect in the most capricious manner various places in the neighbourhood of Sunderland and Newcastle. On the 22d of January, it appeared at Kirkintilloch, on the Forth and Clyde canal, about seven miles from Glasgow, and in the beginning of February it broke out in London, in Glasgow, and various parts of that very populous neighbourhood, still continuing to extend around the places which had been the theatres of its former eruptions.

From this extreme irregularity of the progress of the disease, it becomes very inconvenient to notice the places attacked in the order of time when it first appeared in each. Our narrative will be less broken by arranging them in the order of proximity to the place first affected.

SEAHAM.—Along the eastern coast it has appeared at the fishing port of Seaham, about four miles to the south of Sunderland. It does not appear to have prevailed very extensively in this place; for, from the 15th of December, the date of the first, to the 21st, the date of the last report, only seven cases are noticed, five of which were fatal.

NORTH SHIELDS AND TYNEMOUTH.—This place lies about seven miles to the North of Sunderland, at the mouth of the Tyne: it is remarkable for the long time during which the cholera has continued to prevail, and the slow progress which it has made; from the 11th December to the end of the month, only 19 cases are reported, and these occurred on the 11th, 13th, 19th, 20th, 21st, 22d, 23d, 27th, and 30th.

In January cases began to occur every day; in the first week 20, in the second 24, in the third 23, in the fourth 45, and in the fortnight from the 29th January to 11th February, 122. We ought to observe that in the latter part of this time are included cases from the neighbouring townships of Murton and Chirton. Up to the 3d of March 334 cases and 97 deaths had occurred.

SOUTH SHIELDS.—At this place, which lies on the opposite bank of the Tyne, nearer Sunderland, it is remarkable that the cholera did not break out until the 27th December, and then prevailed only to a very trifling extent, eight cases having occurred and three deaths only in the first four weeks after its first appearance, and in this number is included cases from the neighbouring townships of Westoe and Hebburn colliery.

It has also appeared along the coast at Seaton Sluice, a few miles to the North of Tynemouth; at Blyth, ten miles distant, and at Hartly, where are extensive collieries, glassworks, and other manufactories, about four miles E.N.E. of Blyth. It is remarkable that its appearance at Seaham was in December, and this place was entirely free, when Hartly, close by, was severely affected in the beginning of February.

Next, following the course of the Tyne, it has been very prevalent in the towns and collieries which are scattered along its banks, and at a distance of a few miles.

At Earsden colliery, about four miles to the north of Shields, it broke out in January: the first reports from this place are dated the 25th and 26th of that month. On the first day 32 cases and 4 deaths are reported; on the 26th, 10; on the 28th, 6. Eighteen other cases occurred up to the 6th of February, and four on the 7th, after which the reports are discontinued; making a total of 74 cases, only 8 of which were fatal. In this place we observe a very small mortality; and it is probable that the majority of the cases occurred in the form of diarrhoea, for whilst some report only the severest of the cholera cases, others include many if not the whole of the cases of diarrhoea which prevailed at the same time; hence we cannot correctly ascertain the severity of the epidemic in different places, except by comparison of the mortality with the whole population.

Percy Main, the next place in order of proximity to Shields, situate on the North bank of the Tyne between Newcastle and Shields, was one of the last places attacked. The disease broke out here in the beginning of February with great violence; in ten days 90 cases having occurred, and 12 deaths. It afterwards continued to prevail, but with diminished fatality.

At Howden Dock and Wallsend, almost close to the former place, it appeared in the beginning of January, but with little severity; up to the end of the month, when the reports ceased, but 32 cases and 12 deaths having occurred.

Along the South bank of the Tyne we have already noticed Westoe and Hebburn in the reports from South Shields. The latter place is in the parish of Jarrow, which also contains the Chappelry of Haworth. Here and in the village of Jarrow, and also in the parish of Washington the cholera has appeared.

At Newcastle we have already stated that one fatal case of cholera occurred on the 26th October, the day that the first acknowledged case occurred in Sunderland. No other fatal case was afterwards noticed until the 26th of November, when a man of the name of Jordan died. This man was a labourer, of temperate habits, and previous good health, residing in a small and dirty room in the New Road, the floor of which was somewhat below the level of the street. From the minutest enquiry it did not appear that this man had been in any way exposed to possible sources of infection. The alarm was now raised, and other cases were noticed; but up to the 8th of December only five cases had occurred in all; two of which were fatal. Up to the 12th, 12 cases and 3 deaths had been reported.

In the course of the next seven days, namely, to December 19th, it began to prevail extensively; 86 new cases and 34 deaths occurring. In the week ending the 2d of January it arrived at the height, 211 new cases and 56 deaths being reported; from this time it declined slowly; from the 2d to the 9th day the new cases and deaths were 159, 52; from the 7th to the 16th, 118, 38: from the 16th to the 23d, 86, 29; from the 23d to the 30th, 65, 26; from the 30th January to 6th February, 32, 7; from the 6th to 13th, 8.

The population of Newcastle is 70,000. In the early part of this time its ravages were confined to the banks of the river, particularly in Sandgate and the lanes running from it; but in the beginning of January many cases occurred in the higher parts of the town, as in Westgate, Percy Street, and Prudhoe Street.

GATESHEAD. Gateshead, a populous borough, containing about 10,000 inhabitants, and separated from Newcastle only by the River Tyne, with which place the most constant intercourse exists, presents one of the most remarkable circumstances hitherto noticed in the progress of the cholera in England. It has been considered a fact establishing the contagious propagation of this disease, that it should sometimes first appear at that end of a town which lies nearest the place previously affected; but although the road from Sunderland to Newcastle lies through Gateshead, and the most frequent intercourse exists between all these places, and cholera had raged with great severity in Newcastle for more than a fortnight, up to the evening of the 25th of December only two cases had occurred, one on the 14th and the other on the 24th. On the morning of Christmas day this disease broke out with the greatest violence, and in the short space of three days 142 cases and 55 deaths had occurred. On the 26th, 39, 10; on the 27th, 59, 32; and on the 28th, 44, 13. In the course of the first week 250 cases and 71 deaths are reported; but its decline was almost as rapid as its inroad; in the second week, of new cases and deaths there were 95 and 42; in the third week, 30 and 15; and from this time up to the 2d February, when the disease ceased, only 20 cases and 12 deaths are reported. Seven of these appeared on the 7th of February.

In Gateshead, as in all other places, it prevailed to the greatest extent in particular parts of the town, chiefly in Hillgate, Pipewell-gate, Oakwell-gate, Jackson Street, and Bottle Bank. As usual, the chief number of its victims are found amongst the most wretched class of the inhabitants; but here a very considerable number of working people in more comfortable circumstances were affected; and its extraordinary violence during the first few days has been ascribed to the powerful assistance which gluttony and drunkenness have always been found to give to the other causes of this disease; and it is well known that Christmas Eve is devoted to the enjoyment of good cheer among the lower ranks in this country; and that drunkenness prevailed to a frightful extent in Gateshead on Christmas Day, we have the testimony of many witnesses. But it is another of the strange anomalies presented by this epidemic, that other places, as the lower part of Newcastle, were equally dissipated, and infinitely more exposed to contagion, situate also not many hundred yards distant, thus precluding the possibility of the existence of any different atmospheric state: and yet the irruption of this disease was simultaneous over many parts of the parish, in a tract $3\frac{1}{2}$ miles around the Borough. At Gateshead Fell, up to the 27th, 10 cases had occurred and 6 deaths; and it subsequently prevailed with much severity; but such reports as have been given are included in the former. This village occupies a high and bleak situation, about two miles from the Borough, and in this respect forms a striking contrast to the low confined parts of the towns of Sunderland and Newcastle, where the cholera has chiefly raged; but it appears to us that too much has been attributed to bad air and dirt: no doubt some part of the effect is due to them; but most is to be ascribed to the constitutions of the usual inhabitants of such places. At Gateshead Fell, the abodes of squalid poverty have been the domicile of this disease; and the houses in which it has occurred are said to have formed one of the most miserable features connected with this epidemic. The subjects of attack were seen lying in pairs in the same room with the dead, or those labouring under severe symptoms.

In many of the collieries and villages around Newcastle the cholera has prevailed to an alarming extent; in others it has been very slight, and some isolated cases have occurred in the inhabitants of lonely houses, far removed from all previous communication with the sick.

To the east of Gateshead Fells Ayrton Bank, has suffered; to the south some cases

appeared at Chester-le-Street, in the early part of December, but it has not subsequently prevailed. In the beginning of January, Wickham was attacked a little to the east; and in February a case occurred at Friars Goose.

In Newburn, a village containing about 400 inhabitants, about five miles from Gateshead, the cholera commenced on the 1st of January. During the last half of that month it prevailed with very great severity, attacking upwards of 200 persons. In February it declined; and up to the 9th of this month the mortality had been 57 out of 300.

In this irruption the rector and some other persons of comparative opulence fell victims. The disease was not entirely confined to the village, but extended itself over a considerable portion of the parish, which contains upwards of 5,000 inhabitants, scattered over a space of about five miles.

In the villages and collieries to the north of the Tyne, around Newcastle, the cholera has prevailed with varying degrees of severity, breaking out and again disappearing in the most irregular manner.

To the West and N.-West, Dunstan, $2\frac{1}{2}$ miles distant, was affected in the last week of December; subsequently it has prevailed extensively at Benwell, three miles distant; it appeared in the middle of January, and also in the neighbourhood of Elswick, Scotswood, Bells Close, and Leamington, ceasing about the end of January; but breaking out in Walbottle, New-Wynning, Black-Collerton, $4\frac{1}{2}$, and Wylan, nine miles distant, in the beginning of February. At Halswhistle, eighteen miles distant, one fatal case occurred. A young man, who had left Newcastle on a visit to some friends at that place, was taken ill with the cholera immediately on his arrival, and expired in a few hours.

To the N. and N.E. of Newcastle, Seghill, and New York, and Wide-open Colliery were affected, about the same time as Newcastle, and the disease ceased in the beginning of January. Seghill is $6\frac{1}{2}$ miles distant. At Killingworth and Backworth Collieries, about the same distance, it appeared; in the former in the latter end of January, and in the latter in the beginning of February, breaking out with such violence as to produce 70 cases up to the 7th, and 8 deaths.

At Alnwick it was reported to have appeared early in December, but has not there prevailed. At Durham, Morpeth, Stockton-on-Tees, and Doncaster, single cases have occurred, and at Pittington, a short distance from Durham, in the direction of Hetton. In the extensive parish of Houghton-le-Spring the cholera has prevailed at the villages of Houghton, Hetton, Rainton, Penshaw, and Newbottle. The population of the whole parish is about 2,000; of these the township of Hetton contains 999. The first cases occurred at the village of Houghton. This place occupies an elevated situation, and is inhabited by people in comfortable circumstances, but it never prevailed to much extent. At the same time, namely, in the beginning of December, some cases also occurred at Newbottle, also in a high and bleak situation; in the latter end of the month, Penshaw is added to the reports; and, in the beginning of January, Hetton. This place, distinguished by the significant name of Hetton in the Hole, has furnished nearly the whole of the cases reported from the parish. From the middle to the end of January it prevailed here with very great severity, declining in the beginning of February. The numbers again increased towards the middle of the month.

In Middle Rainton, a village close by Houghton and Hetton, the cholera did not prevail extensively until the beginning of February.

HADDINGTON.—This place, selected by the cholera for its first eruption in Scotland, is situated on the bank of a small river, the Tyne, which empties itself into the German Ocean: near Dunbar the North Road passes through it: the distance from Edinburgh 17 miles, and rather more than 100 from Newcastle. The first case occurred here on the 17th of December. A man of dissipated habits, who had been wandering about in a state of intoxication, and almost naked, the previous night, was attacked on the 17th, and died on the 20th December. No other person was seized until Christmas Day, when two other cases occurred, one a girl of seven years of age, the other a woman of dissipated habits. On the 27th three others were seized, and now it prevailed pretty extensively for a fortnight: up to January 9th, 34 cases and 15 deaths had occurred: it declined after this; but 11 new cases and 8 deaths taking place in the succeeding fortnight, up to January 25th. On the 29th of this month it again increased in severity, producing 56 cases and 30 deaths in the fortnight preceding the 7th February.

The earliest cases occurred in a filthy close locality on the river-side, and the de-

bauched, the half-starved, and old persons, as in most other places, constituted the major part of its victims; but, during the first severe irruption several respectable persons died, amongst whom may be particularized the Procurator Fischal, and a well-known school-master. It has been remarked, that this first irruption was confined to the eastern part of the town, to a space perhaps not more than one hundred yards square; but in the second attack that place was entirely forsaken, the disease appearing again in a circumscribed situation, of like extent, in the centre of the town, and amongst those who perished in this attack are noticed a number of highly respectable and opulent individuals. It is also here remarked, that its seizures generally took place in the night, but very few young persons being affected, all those seized recovered with one or two exceptions.

The population of Haddington is 5255, and the severity of the disease has been trifling if compared with many other places in this neighbourhood.

The next place affected was Atherstone-ford about two miles from Haddington. Here two cases occurred on the 8th January; but, after this, it does not appear to have prevailed here.

TRANENT.—This village lies on the North road, about seven miles West of Haddington. It contains about 1700 inhabitants; with the exception of some shopkeepers and other tradesmen, they are chiefly composed of colliers and other labouring people. The first appearance of the cholera here is not very accurately noticed: rumours of its breaking out were first raised on the 15th of January, from the occurrence of several fatal cases together, but afterwards it was recollectcd that three other cases had previously occurred, which, at the time, were passed by without notice. One of these, an old woman of 70, died, after a few hours' illness, on the 12th; but, as she had been complaining for several years, no particular notice was taken of the disease at the time.

On the 14th a boy, aged 12, of the name of Reid, who had gone to his work as usual in the coal-pit, was there taken ill; he fainted twice before reaching home—his strength became prostrated—the symptoms of cholera followed, and he died on the morning of the 15th. His sister, aged 25, was also at work below ground on the 14th, during her usual hours, and sat up till about 12 o'clock at night preparing a dress, when she was seized with the complaint, and died in the afternoon of the 15th.

On the 15th, a man of the name of Mustard was taken ill, and died the following day. This man was the son of the old woman whose case is noticed above.¹⁷ On the 16th, the father of the children who died on the 15th was taken ill, and a beggar, at the time residing in a low lodging-house in Tranent. The disease rapidly increased, having seized 49 persons, and proved fatal to 20, up to the 23d January; the reports continue to furnish an increasing number of cases up to the 12th of February; the first week after the 23d January having of new cases and deaths, 42, 17; the 2d, 57, 21; the 3d, 64, 25; and the 4th, 91, 12. In the succeeding week, namely, to the 19th February only, the disease declined to 18 new cases and 8 deaths.

We have seen the cholera spreading in the North of England by successive irruptions, and such has been the case in Scotland; for a month had it prevailed at Haddington before it affected the surrounding country, with the exception of the cases noticed at Atherstone-ford; and simultaneous with its appearance at Tranent, Musselburgh was affected, as well as Preston Pans, North Berwick, Biel, near Dunbar, Southfield, and Daddeston. Near Edinburgh, reports of its appearance also came from Dalkeith, Preston Hollm, and Howgate, all on the banks of the North and South Esk, and Hawick, in Teviot Dale. In the course of the next eight or ten days, we find scattered cases from various parts of the surrounding country, of which West Barns, Stenton, and Willingham may be noticed; and, on the 26th, a case at Leith, with 6 on this day and the next in Edinburgh.

On reference to the map, it will be seen that this locality, from 10 to 15 miles in width, occupies the Southern shore of the Frith of Forth, from Edinburgh to the neighbourhood of Dunbar, a distance of 28 miles; a tract occupied by fishermen and by colliers, like those in which the cholera has prevailed in the North of England, and, with the exception of the rising ground in the neighbourhood of Edinburgh, towards Dalkeith, low and flat. For this irruption, various concomitant circumstances have been considered the cause. Some dwell upon the revelries of old Hansel Monday, the 16th January, being the first Monday of the year, old style, when the population of Edinburgh poured into East Lothian to visit their friends; others notice an unusual influx of beggars into Tranent during the month of January, driven there by the regulations formed

at the different burgh towns, for the expulsion of vagrants; and others, again, remark the occurrence of the disease chiefly among the colliers at Musselburgh, who had struck for wages. Whatever may have been the cause, this disease has raged in Musselburgh, Tranent, and Preston Pans, with far greater severity than hitherto in any other place in the United Kingdom.

From Musselburgh, the first case is reported on the 18th January, followed by 9 on the 19th, 17 on the 20th: up to the 23d, 81 cases had appeared—29 had died. It continued raging with equal severity until the 9th of February. Up to this date, 386 cases had occurred, and 170 deaths; in the next week, the number of cases is 1-3d below the previous average, and, by the end of the month, it had almost entirely ceased.

Typhus fever prevailed amongst the families of the poor before and during the prevalence of this epidemic. The reports give but a very unfair account of the diseases of the season, the greatest care being taken to exclude all but those cases which presented the severer symptoms of cholera. At least an equal number of bowel-complaints, severe enough to require medical treatment, were unreported.

PRESTON PANS, lying on the coast, between Musselburgh and Tranent, two miles distant from the former, was affected on the 20th January. The first case was that of Jas. Renton, at Preston Grange Colliery: he became unwell about 9 o'clock, p.m. but continued working till about 12; he died the next day. The 2d case was his child, aged about 2—died in 12 hours. The third was the wife of a miner. Of the 6 cases seized on the 22d, one was a carpenter, who made Renton's coffin; another a woman, seized while looking, from her stairhead, at the assemblage of people at the funeral; two were children of widow Bolton, who attended Renton's family when in distress; the other two were altogether unconnected. Beggars, colliers, and dissipated persons form the majority of the fatal cases. The prevalence of the disease was here progressive, increasing up to the end of the first week in February, and then again declining.

We have noticed the existence of the cholera in Haddington for a month before these places were affected; but a reference to our table will shew, that the agent producing it must have operated simultaneously over this tract of country; for it appeared, arrived at its height, and declined at Tranent, Musselburgh, and Preston Pans; the second irruption at Haddington arriving at its height at the same time, and then declining with them.

In the latter part of the time a case appeared at Wallingford, a village half-way between Musselburgh and Tranent.

In the neighbourhood of Haddington, one case occurred at Gladsmuir, 7th February. At West Barns, two miles from Dunbar, it appeared first on the 25th of January. Five fatal cases had occurred previous to the 10th February; on that day 3 took place; and, up to the 23d, 7, of which 4 were fatal.

It appeared at North Berwick about the same time as at Preston Pans, continued to prevail during the first week in February, up to which time 15 cases and 5 deaths had occurred. After this time it ceased, but a single case happening on the 10th.

PORTOBELLO, midway between Edinburgh and Musselburgh, was not affected till the 18th February. The reports from this place are furnished very irregularly. Twenty cases had been fatal up to the 23d of the month.

DALKEITH. Single cases occurred at this place in the latter end of January and through February, but very few persons have been affected.

EDINBURGH. At this place, diarrhoea had been prevalent through the Autumn, and typhus fever. We also hear rumours of fatal cases of cholera appearing at times. On January the 27th, the first acknowledged cases of this epidemic occurred. Three persons were seized on that day, and the same number on the 28th, half of which proved fatal. Of these early cases, some had not been in the way of receiving infection, others had been at Musselburgh, but it is not said whether they had been there exposed. They were of middle age, or old persons of dissipated habits, inhabiting the confined and dirty closes of the old town. From this time to the 6th January, no other case occurred; up to the 15th, but 6 other persons were seized; on the 16th and 17th of February, 7; and, between this and the 22d, but a single case appeared: in the month of March, the disease again ceased.

The history of the irruption of this disease in the neighbourhoods of Glasgow and London, we must defer to another opportunity.

PROPAGATION BY CONTAGION.

After all that has been said on the contagious propagation of the cholera; after the positive and arrogant manner in which this opinion has been maintained, we cannot help feeling an intense interest to examine how far it is confirmed or contradicted by the facts presented in the origin and progress of the disease in this country.

First, with regard to its origin; what proof is there of its importation from any foreign source of infection? It is scarcely worth while to notice the absurd reports that were circulated from Sunderland of the infection being brought from Hamburg, of the first breaking out of the disease among the crews of a vessel from that place who were allowed to ramble about all night on the shore, and its subsequent communication to the inhabitants of the town. These rumours have been sufficiently exposed in the letter from Dr. Brown, published in our last number, and in another from Dr. Ogden in our present.

Whether the first origin of the epidemic be traced back to the month of August, or dated from the seizure of the elder Sproat, no communication of any of the persons affected with any one arriving from foreign ports where the disease prevailed has yet been made out; and with regard to infection having been brought in the clothes-chests of seamen, we may add to the judicious remarks of Dr. Ogden, the observation, that it is not shewn that any person affected had been in any way exposed either by contact or mere approach to these imagined vehicles of contagion, or that inanimate objects, the dead body of cholera patients excepted, were capable of receiving and transmitting the supposed contagion.

Against these idle tales all the facts which have been observed, prove its indigenous origin in Sunderland, viz:—The general prevalence of complaints of the stomach and bowels, diarrhoea especially, and common cholera, not only at Sunderland, but also in various parts of the kingdom:—The earliest appearance of this complaint in particular individuals, previously labouring under disordered functions of the alimentary canal from intemperance, want of food and clothing, or peculiarity of constitution, inhabiting confined and crowded situations, or infirmity induced by previous illness;—while debauchery and drunkenness, and exposure to atmospheric vicissitudes, are found to have immediately preceded its attacks far oftener than communication with the sick.

In like manner, the successive irruptions at Haddington, Kirkintilloch, and London, present proofs of a local origin of the cholera, again refusing to extend itself in the time of most frequent intercourse, and first appearing at very distant places in persons who had not been exposed to any source of infection. These are not exceptions or anomalies which have been witnessed in this country alone; Berlin, Moscow, Vienna, and many other places in Europe and India, gave the same illustration of a local origin;—and the comparison of its rapid extension over Europe, in defiance of all attempts to arrest its progress by cutting off all communication between healthy and sick districts, with the slow intercourse that takes place between them; the comparison of the rapid and unrestricted communication which has all along existed in this country, with the slow, irregular, and capricious extension of the disease here, at once refute all the ridiculous notions which were once maintained of the contagious propagation of the cholera. It is much less infectious than the plague or small-pox, said the abettors of this opinion;—and yet they shut their eyes to the fact, that its rapidity of progress infinitely outstripped the course of these diseases; and whilst a few were allowed to be susceptible in some places, such numbers were suddenly attacked that it was utterly impossible that they could have been exposed to infection, unless, as some have maintained, amongst whom we find Sir W. Russell and Sir D. Barry, that it had been wafted by the winds. The absurdity of this theory is so palpable, that nothing but the arrogance and presumption with which it has been enforced, could excuse a further notice of it. By whom was it formed, and what was the process of false reasoning by which it was supported?

It was formed in the closet, by men ignorant of its phenomena, in contradiction to the observations of all who were practically conversant with the disease. The facts and reasoning of these were set at nought, and all who dared to uphold the contrary opinion were stigmatised as “men who willfully abandoned all the ordinary maxims of prudence and were obstinately blind to the dictates of common sense.”

The frequent extension of the disease where communication with the sick, or persons conveying infection from them, had no existence, as well as the failure of cordons and quarantines in arresting its progress, and the still more frequent exemption where the most frequent intercourse has existed, shew that there may well be other reasons than those assigned for the out-breaking of cholera in the Mauritius, or the little extent to which it prevailed in the neighbouring isle of Bourbon, for the immunity of Sarepta, Peterhoff, the family of the French Consul at Aleppo, and some other similar instances collected in the course of a many thousand miles, of a disease which every where abounds with anomalies.

Nor are these the only points on which erroneous conclusions have been formed. It has been asserted, that the adoption of contagion was safest in its practical bearings—a theory from which no harm could arise, if erroneous. The believers in contagion acknowledge that few are susceptible, and that these are individuals in whom bad diet, deficient clothing, confinement in ill-ventilated and crowded situations, drunkenness, fatigue, distress, or previous ill health, have weakened the powers of the constitution. All who have witnessed the misery occasioned by obstructions to commerce, will perceive that its ravages would be increased by measures which increase the number of the susceptible in a greater ratio than they prevent infection; and if it ever arise from other causes than contagion, the numbers exposed to the influence of these causes would be increased beyond all calculation.

So far it is evident that this disease has appeared in various parts of the country from other causes than contagion; but it still remains to be examined, whether its propagation in the surrounding neighbourhood has been owing to this cause; whether or not it has ever become, under any circumstances, contagious? The order of succession in which places near to each other have been attacked, has been irregular and capricious, as its manner of breaking out in distant parts of the country. Thus the hamlets of Houghton le Spring, Hetton, and Rainton, within the distance of little more than a mile of each other, were affected; Houghton, in the beginning of December; Hetton, in the beginning of January, and Rainton, in the beginning of February: Durham, but a short distance from them, has had only two cases. The disease remained confined to Sunderland until the beginning of December, then it broke out almost simultaneously in all directions. Seaham, Blyth, Newcastle, Chester-le-Street, Seghill, and Newark were affected. Percy Main colliery lies close by Howden Dock, and Wallsend, on the Tyne between Shields and Newcastle; at the latter place it broke out in the beginning of January, but did not rage severely: at the former, it appeared in the beginning of the next month, and prevailed with great violence. It is needless to multiply examples. Every part of its course abounds with facts shewing the dependence of this disease on other causes than that of human intercourse. It would indeed be difficult to point out any single place which has been affected early in proportion to the frequency of the communication of its inhabitants with those of any other place where it raged; but if we were to found our conclusions on such facts, we should fall into the same error as that which the exclusive contagionists have previously committed. It is upon direct instances of communication between the sick and the healthy, not on probabilities or possibilities that our reasoning must be founded. The general facts are these; a very great number of persons have been exposed to the sick without being affected with the disease, or communicating it to those whom they approached: a great number of persons have been seized who have not been in any way exposed to emanations from the sick, whether directly from their persons, or indirectly from substances which had imbibed them. Some have had the disease after such exposure, and it has raged particularly amongst families, often affecting, and sometimes proving fatal to nearly every individual composing them. Shall we then say, that the disease has been produced by contagion in the latter and not in the former? To prove the existence of this agent something more is necessary than the occasional seizure of persons who have previously been in communication with the sick; we must know that no other cause can have produced the disease in them, before we are authorised to attribute it to the operation of a something invisible, intangible, and not by any means to be rendered apparent to our senses; the evidence of this cannot be rendered perfect in our present state of ignorance of the general causes of the cholera; and fortunately it is not a question of great importance. Admit the possibility of its being occasionally as contagious as typhus, merely for the sake of precaution, and there is no fear of its spreading from this cause farther than that disease, even if no restriction on internal intercourse were imposed. To remove all fear from

the minds of the attendants of the sick ; to do away with all restrictions which operate injuriously on trade; yet to expose no one unnecessarily; to supply the poor with wholesome food and clothing; and to avoid excess of all kinds, especially drunkenness; are the means which both reason and experience demonstrate to be most effectual to arrest the progress of this disease.

SYMPTOMS.

The cholera in England has maintained a striking resemblance to the oft repeated descriptions of its symptoms in other countries. Thus, the severe vomiting and purging of peculiar characteristic secretions; the nausea, internal burning at the epigastrium, intolerable weight, anguish, and oppression; the paroxysms of severe pain commencing at the stomach, and rapidly extending over the whole alimentary canal; the ardent thirst; the cramps; the deadly prostration, anxiety, and dejection; the conscious feeling of the hand of death; the failing of the circulation and animal heat; the peculiar cold sweat; shrinking of the skin and subjacent tissues; sharpening of the features; contraction of the fingers, and prominence of the tendons; the hollow, sunken eye; the leaden aspect of the surface, particularly visible in the hands, feet, nails, lips, and the circles around the mouth and eyes; the black, thick blood, often not to be obtained; the difficult and slow respiration; cold breath and tongue; the whispering voice, and if death comes not in this shape, the fever rapidly coming on, often takes the last stage of typhus. The sudden invasion, speedy death, or, as rapid recovery, have all been witnessed in England, as well as in the North of Russia, and on the banks of the Ganges.*

But this alarming catalogue drawn up from the whole presents no current picture of any individual case. These different symptoms in different persons, vary infinitely in the degree of their severity, from the common diarrhoea, with little pains and no cramps, and no greater affection of the circulation and temperature of the surface than occurs from the operation of an ordinary purgative, up to the sudden attack of a prostration so alarming, that the sick man becomes scarcely sensible of pain when the secretions are retained and the heart's action sinks at once.

To illustrate these different forms we have made the following selection of cases.

The following bears a greater resemblance to common cholera than to the severer cases of the present epidemic.

Mr. A. Hopton, Deputy Governor of the Goal at Durham, age 58, of rather free habits; general health not very good. On the 14th of January, he felt oppression at the stomach, sense of heat, and uneasiness, with occasional nausea. At two o'clock on the morning of the following day, he was seized with violent purging, attended with most distressing cramps in the limbs: the evacuations were almost incessant throughout the day; thin and watery, of a pale white colour, almost without smell; at eight in the evening, there was great alteration in his appearance; countenance blanched and anxious; features sharp; skin rather cold and covered with a clammy sweat; pulse slow and weak; breathing oppressed; complains of most distressing thirst, some softening of cuticle of fingers; the cramps are not constant, but recur at intervals; most violent in the hands and feet; occasionally extending to the thigh; inclined to sleep in the intervals.

Treatment. Coffee, mustard, brandy, opium, cayenne pepper, camphor, carb. ammonia, and oil of peppermint. The symptoms continued somewhat mitigated on this day and the following.

The premonitory symptoms have been, in some cases, of long duration; in others absent. They are uneasiness; a sense of heat and disorder in the stomach and bowels; frequently diarrhoea, which at first presents no peculiar character, so that no man could tell whether an attack of cholera was impending or not; this has prevailed, in some cases, for a week or more before the attack, in others, it has only preceded the other symptoms for a few hours, or a shorter period.

The elder Sproat, aged 69, the first case of acknowledged cholera in Sunderland, had been labouring under diarrhoea a week or ten days before his seizure. On Wednesday, Oct.

* We think that certain documents in this number, will shew that a very important modification of the disease has taken place since its first irruption in India—a modification that inculcates considerable difference in treatment.—ED.

19th, he had been taken worse : on Thursday and Friday, he had vomiting and purging of faeculent matter, but no symptom of collapse. On Saturday he was greatly better, took a mutton-chop to his dinner, and went out to his keel in the afternoon. In about 20 minutes he returned, and was taken very ill, with severe shivering, giddiness, cramp at the stomach, violent vomiting and purging. On Sunday morning he was sinking ; pulse imperceptible ; extremities cold ; skin dry ; eyes sunk ; lips blue ; features shrunk ; whispering voice ; violent vomiting and purging ; cramp of the calves of the legs, and complete prostration. In the afternoon his skin became warmer, but the other symptoms continued. On the 24th he was quite collapsed, with aggravation of all the symptoms except the vomiting, which had entirely ceased ; stools passed involuntarily. On the following morning he was less collapsed ; countenance more natural ; blueness of the lips had disappeared ; the vomiting had ceased ; but the purging still continued less violent, and nearly imperceptible ; extremities cold ; spasms of the legs continued. Towards evening, the purging and vomiting had entirely ceased ; he became sleepy ; the other symptoms continuing. On the morning of the 26th he was much weaker ; pulse scarcely perceptible ; countenance quite shrunk ; eyes sunk ; lips blue, as well as the lower extremities ; the nails were livid. He was comatose, and died at 12 at noon.

2. Premonitory Symptoms, slight, and of very short Duration.

Susanna Clark, aged 18. December 5th, about 5 in the evening, she complained of uneasiness and distension of the stomach and bowels : her countenance became pallid, and expressive of much anxiety and distress. She was attacked with vomiting and purging of bilious fluids, and with cramps. She continued in this state until 8 in the evening, when bleeding was unsuccessfully attempted. She took brandy, and a mixture containing laudanum, capsicum, and ammonia. The vomiting ceased, she became much better in the night, and, on the morning of the 6th, her pulse was full and her body warm, complaining of little except a pain in the head : but, about midnight, the cramps, vomiting, and purging returned ; she became cold, and apparently almost lifeless, though still sensible. Her pulse was gone ; her eyes deeply sunk ; she remained in the same state through the day, until 6 at night, when she became comatose, and died at 8.

3. Premonitory Diarrhoea, of short Duration.

Isabella Carr, aged 6. Went to bed in good health. During the night she had some diarrhoea. At 8 o'clock on the morning of the 11th Dec. she was attacked with severe vomiting of a watery fluid and purging of liquid matters, tinged with bile of a faint faecal odour. At noon, she was without pulse, cold, her hands blue, eyes much shrunk in their orbits, the vomiting and purging still going on. She died at 3 in the afternoon.

In the last case, purging continued nearly up to the time of death ; in others, which constitute the majority of the fatal cases in this country and in others, the vomiting and purging soon give way to alarming prostration.

Thomas Wilson, a keelman, at. 51, was attacked, on the morning of 31st October, about four o'clock, with vomiting and copious purging of a fluid resembling rice-water, accompanied by severe abdominal pain and spasms of the extremities. At 6, carb. ammon. laudanum and warm bath. At 7, vomiting ceased ; one dejection, resembling rice water, of a peculiar sickening and highly offensive smell, something like putrid animal matter. Complained of intense pain in the epigastrium and abdomen—cramps of the extremities—extreme restlessness, moaning and sighing. Pulse imperceptible at the wrist—surface of the body cold as death—lips blue—eyes dim and sunk in the head—speaks in a whisper, intellect clear—tongue moist and cold—respiration slow—urine suppressed : the spasms ceased about 9—no vomiting or purging. There appeared a total loss of power of the nervous and circulating systems ; at 12, the appearance of a living corpse—eyes deeply sunk in their sockets—hands and fingers remarkably shrivelled, very much reduced in size, and of a light blue tinge. He gradually got worse, and expired at three o'clock in the afternoon.

E. Turnbull, a strong healthy woman, was taken ill 1st November, about one o'clock. Between four and five the following symptoms were present: violent vomiting and purging of a watery fluid, in appearance like oatmeal gruel ; excruciating spasms in the muscles of the legs and arms ; pulse only perceptible at one wrist ; voice puerile ; tongue cool ; extremities cold, and of a livid hue ; fingers and toes much shrunk ; intellects perfectly clear ; complaining of pain at the region of the stomach, and calling for cold water. A vein was freely opened in each arm, from which flowed only a few drops of

blood, like treacle: external and internal stimulants, with opium, were freely used, without effect. About 10, a.m. the cramps had nearly ceased: the skin became universally cold as marble, and, at the epigastre, of a deep purple hue. From this time till 2, p.m. the period of her death, the only symptoms of life were a gentle heaving of the chest, a rational answer being given to any question proposed to her.

The following case presents a little variety in the jactitation.

Maria Mills, æt. 42. Attacked at half-past 10, 7th Dec. with vomiting, purging, and cramps at the extremities. At half-past 4, p.m. the pulse was imperceptible—cold, clammy skin—spasms of legs and toes—breath laborious—thirst excessive— integuments of fingers and toes corrugated and softened—no more evacuations. Half-past 8. Increased labour in breathing—tongue colder—head and arms livid—nails dark—perfectly sensible. Complained of no pain, but shrunk from pressure at the epigastrum; jactitation, frequently changing her position with considerable quickness and force; every moment seemed the impulse of some convulsive efforts; loss of deglutition; death, 12½ hours from commencement.

William Bell, æt. 67, was taken ill at 8 o'clock at night, December 2d, with cramps in the legs, vomiting, purging, and coldness of the whole body. No pulse could be felt at 10; oz. ij. of blood only could be obtained; he passed a restless night; no pulse; the body cold and damp; eyes sunk; cuticle of hands and feet corrugated and bluish; tongue warm; lies without stirring, and when asked where he feels pain, *lays his hand on the epigastrum and complains of a great weight* on the same region. These were the symptoms at 11, a.m. 3d. He died at 4 in the afternoon.

Susan Roach, æt. 40. She was taken ill at 8 in the morning, 8th Dec. with cramps, vomiting and purging, great uneasiness at epigastrium. At 9 in the evening, when first seen, her extremities were cold and livid, but the surface of the trunk was not much below the natural temperature. Tongue and breath cold; pulse perceptible; four ounces of blood were with difficulty taken away. She was better on the 9th and 10th, and convalescent on the 11th. The treatment was brandy and other stimulants, dry heat and friction to the surface.

Severe Case in a Child.

Daltel, æt. 2½, had slight diarrhoea for about a week; had been playing in the lane in the day. About 7 o'clock in the evening, Dec. 1st, he was seized with severe vomiting and purging; the surface of the whole body speedily became cold; was very restless during the night. At 11 o'clock in the morning of the 2d he was lying motionless on the lap of his aunt, his skin cold and damp, *no pulse, no vomiting or purging*; his eyes sunk in their orbits, and surrounded with a dark and broad circle; his lips, and the parts of his face around the mouth, and the hands, of dirty purplish blue colour. At 7 in the evening he died.

Absence of Premonitory Symptoms.

Mrs. Fairly, æt. 61, chief nurse of the cholera hospital at Sunderland. She had eaten her breakfast with her usual appetite, and may be said to have continued in perfect health up to the moment of attack. At 11, a.m. Dec. 2d, she was attacked with purging and some vomiting; the fluids ejected soon exhibited the characteristic appearance; she had pains in the epigastrum and general uneasiness; the vomiting and purging had continued for an hour when the countenance indicated great depression, the voice was sinking, pulse scarcely perceptible, skin cold and damp, with severe spasms of the muscles of the legs and thighs; she had taken some pills of calomel, opium and capsicum on the commencement of the attack, and now she was bled to about 20 ounces, *after which* the pulse almost completely disappeared at the wrist, the vomiting and purging ceased, but the symptoms of collapse increased; the pulse quite gone, skin cold and clammy, the eyes sunk, and surrounded by a dark ring, great thirst, moaning, restlessness, complains of severe pain in the epigastrum, and utter dejection of spirits. At six in the evening the pulse became slightly perceptible; the great pain and oppression at the stomach continue; she fell asleep at seven, but awoke soon afterwards in a state of great suffering; was restless, scarce any pulse, at times much convulsed; was sensible though she does not speak; deep blueness of the hands and feet; the cuticle of sudden appearance. Died about a quarter after eight, after nine hours' illness.

Long Duration of the Stage of Collapse.

Jane Todd, æt. 54: At 8 o'clock, p. m. Dec. 4th, she was suddenly taken ill with vomiting, purging, and cramps. At 11, a. m. 5th, the pulse had ceased, the general coldness of surface was present, the sunken eyes surrounded with a dark ring, and sharp features; lies quiet, unwilling to be disturbed; the vomiting, purging, and cramps have ceased. She continued in this state, making no complaints, sleeping a little at times, until the morning of the 7th, when she died; the only alteration in the last 24 hours being the return of some warmth to the surface, and a slight fluttering in the pulse.

Slight vomiting and purging, resembling the cold stage of a remittent more than Cholera.

Susan Hanson, æt. 19: At 2, p. m Nov. 29th, she was attacked with shivering and coldness of surface, cramps in the left arm and leg; some, but *not severe*, vomiting and purging, and pain in the head. At 8 there was a general coldness of the surface, a feeble pulse and cramps; at 12, pulse 98; tongue moist, clean, and warm; great thirst; cramps in the arms; hurried respiration; great pain and weight at the precordia; nausea, but no vomiting; pain in the head and vertigo: bleeding relieved the breathing, external warmth was applied. In the evening she was much better, had no cramps, vomiting, or purging; on the following day only a little pain at the stomach remained.

Evacuations trifling; no Sweat; slow Course; Fever little developed.

E. Scott, æt. 50: During the night she had some vomiting and purging, but not severe; evacuations resembled rice-water or thin gruel. At 11, p. m. no pulse at the wrist, tongue and breath cold, body cold and dry. Continued in the same state until the afternoon of the following day, when very trifling reaction occurred, and the pulse became perceptible. 3d day. The skin of the trunk warm and dry, hands and feet cold, tongue dry and brown, pulse 70, easily compressed; bowels relaxed, dejections contain bile. 4th day. Pulse very feeble and slow, skin dry, tongue dry and brown, speaks occasionally, but unless addressed she lies in a comatose state, refusing everything. 5th day. Remained in the same condition; at times in a state of coma, but occasionally very restless. Died in the evening.

Long Duration of Purging—Slow Course of Fever.

Isabella Elliot, æt. 5: Taken ill on the morning of the 24th with spasms, vomiting, and purging; the stage of collapse came on rapidly at 10 o'clock; her extremities were very cold, her countenance and fingers blue; eyes deeply sunk in their orbits; still vomiting and purging; fluids like rice-water; in the evening the breathing was difficult, the skin became warm, the countenance improved, no cramps, but pain at the stomach. Nov. 25th, noon, except purging and eye remaining sunk, all other symptoms favourable. In the evening reaction was fully established, the surface became hot, pulse rapid, respiration free, eyes lively, restlessness; the following morning much improved and pulse still quick; some bile is observed in the dejections; (had rhub. and mag. and turpentine injection the previous night.) Nov. 27th. Much purging, conjunctiva much injected, restless, pulse quick; in the evening breathing difficult, skin hot, spasms of the abdominal muscles, conjunctiva becoming dim and opaque, lips dry, gums covered with black sordes. Died at 4 in the morning of the 28th.

The father of this child affords a case of long duration of the succeeding fever. Thomas Elliot, æt. 34: At 2 o'clock on Monday morning he had severe symptoms of collapse, with cramps and purging at intervals. After inhaling two large bladders of oxygen gas, the pulse returned to the wrist: half an ounce of liq. ammonia was given and repeated in half an hour. At 10, a. m. the cramps, vomiting, and purging had ceased; the pulse was perceptible, but the face still collapsed, and the breathing difficult. At noon, the pulse increased in rapidity, and some symptoms of fever appeared. Stimulants were omitted. The next day the fever was increased, with pain of head, and great restlessness. 30th Nov. It had assumed a bad form of typhus; no urine has been passed: during his illness; the bowels are soft and free from pain; the dejections contain bile. He gradually became worse, the eyes much injected, delirium continuing, and on the night of the 2d December he sank into a state of coma, from which he was with difficulty roused. Died on the night of the 4th, having passed no urine since the 28th November.

Recovery from Consecutive Fever.

Isabella Cowan, aged 10, was taken ill Nov. 25th, with vomiting and purging, having previously had slight diarrhoea. On the following morning her pulse could scarcely be felt; she had no cramps; her tongue, breath, and surface of the body generally, were cold; her fingers and lips blue. Treatment directed by Dr. Ogden—mustard poultice over the stomach, two grains of capsicum, one of calomel, and $\frac{1}{4}$ of a grain of opium. Every hour warm brandy and water; dry heat to the body, and diligent frictions with hot flannels. In the evening the purging of fluids like rice-water continued, and in the dejections were many ascarides; her skin was warm, her colour and circulation improved. Nov. 27th, the pulse was full, the heat of body natural. An enema containing some oil terebinthinae was given. The following day she gradually sunk into a state of fever resembling typhus, attended with delirium. She was slowly recovering from this through the use of mild aperients, cold applications to the head, and blisters to the nape of the neck, when a relapse was occasioned by her mother giving her some bad pastry. On the 8th December she was quite well, excepting some debility.

We may add a case in which the evacuations were very profuse, and another in which the cramps were severe.

Betty Short, æt. 45: Had suffered in the afternoon, Nov. 7th, from distention of the bowels and general uneasiness, for which she had taken calomel, extract. colocynth. and salts, with infusion of senna. At 10 at night she was sitting by the fire, drawn up in severe cramp, vomiting profusely a mucous watery-looking fluid, tinged with the ingesta; copious dejections (in fact a pailful) of bilious-coloured liquid. Extremities cold and livid; pulse 100, scarcely perceptible, and extremely small; tongue cold; great restlessness and anxiety. The next day the cramps disappeared, the failure of the circulation and prostration increased, the purging diminished; brandy was constantly rejected. On the 9th the pulse became perceptible; in the morning the vomiting and purging ceased, but the prostration increased: at night the pulse again became imperceptible. She died at half-past 12, p. m.

2. *Case in which the Cramps were Severe.*

Haddington.—Samuel Parson, aged 42, had been attacked at half-past 3, a.m. 31st December, with vomiting and purging, accompanied with pain of abdomen and much thirst; to allay which he had taken frequent draughts of cold water, vomiting them as soon as taken. Said to have had three alvine evacuations. The countenance is of a livid ashen hue; features shrunk; eyes deeply sunk, surrounded with a livid areola, half closed and turned upwards; breathing difficult; much oppression at the chest; headache; tongue white; severe thirst; urgent craving for cold water; hands covered with cold sweat; severe cramps in the legs, and spasms in the arms and fingers; pulse not to be felt at the wrist, and but indistinctly far up the humeral artery: 25 minutes after 7 the vomiting had ceased, but he continued to retch frequently. Coldness of surface increasing; cramps continue severe; prostration rapidly increasing; at 9 cold sweat all over the body; no motion or vomiting; unable to swallow at $\frac{1}{2}$ past 9; died at 10 minutes past 10 o'clock.

The treatment was bleeding to the extent of six ounces; sinapisms with oil of turpentine to the abdomen and feet; friction of the legs with oil of turpentine; a drachm of laudanum and aether in a draught; a wine-glass of brandy and hot water to be repeated every half-hour.

In these different varieties of the severe forms of cholera we have very copious evacuations without the peculiar collapse, and the latter sometimes without the precession of copious evacuations; in other cases it has succeeded these after various intervals of time, and has also occasionally preceded them. We have seen some recover from this alarming state without going through any consecutive fever; others pass from the one into the other, proving fatal to most, but not to all.

In some the vomiting is almost absent, and in others is very profuse and frequent: the same is true of the purging. The cramps at times form the most distressing symptom; at other times they are absent. The pulse has been found greatly retarded as well as quickened; the respiration occasionally slow and very difficult, but the strongest marked failure of the circulation has taken place whilst respiration remained free: and all these different forms are met with in children of tender years, as well as in the aged; in males as well as females; notwithstanding some varieties occur more frequently in particular constitutions than in others.

In selecting for illustration of its symptoms, the severest cases of the present epidemic, we have followed the beaten track; one which leads to very erroneous impressions of the disease in general. Cases of this severity form but a very small proportion of the whole; the greater number have a closer resemblance to the ordinary forms of common cholera; and still more prevalent have been disorders of the bowels, scarcely if at all differing from ordinary diarrhoea—in every possible grade of intensity, from the slight faeculent relaxation which has not kept the person labouring under it from his usual occupation, up to the copious and frequent purging of reddish-colored watery fluids, attended with much prostration. It has also been observed, that the dejections have frequently presented a greater resemblance to those of cholera than diarrhoea, that is, more fluid, whiter, and less faeculent than they usually are in the latter complaint.

All these different forms of disorder are found to run so much into each other, that no proper line of distinction exists in nature. We have observed in the details of the preceding cases the frequency of diarrhoea as a precursor of cholera, which, Dr. M'Cann observes, "in a great majority of cases, presented for a time no peculiar character; so that no man could tell, when called early to a patient labouring under it, whether an attack of cholera was impending or not." Nor have these things been peculiar to the epidemic in England; the reports of Drs. Russell and Barry from Russia, and various others from different parts of Europe, all observe the same.

Although it is very seldom that the comparative prevalence of these different forms of disease are reported, in the observations of Dr. Kumes on the cholera, at the Mauritius, which we have already had occasion to notice, as the most complete of any which have been published, we have the following table:—

	Nov.	December.	January.	Total.
Cholera Lethalis.....	2	12	1	15
Mitiōr	2	28	11	42
Diarrhoea.....	2	7	6	25
Vomitus	5	17	1	23
Signa Anomala	30	3	33
				138

These cases occurred in the 56th Regt. the number of which remaining at Head Quarters were, in Nov., 617—Dec., 593—Jan., 617. Dr. Kumes observes, we may perhaps safely assume, that they all depended on the same cause, modified in its operation by peculiarities of constitution, habits of life, and circumstances of exposure.

In the reports from Sunderland, for a short time, cases of diarrhoea were returned; and although some of cholera were included in them, there is sufficient reason to believe the diarrhoea was actually more frequent than both the milder and severer forms of cholera. By the orders of the Board of Health, no returns of any but those cases which really assumed the forms of cholera have been made; hence we are deprived of much very important information: but that diarrhoea did continue to prevail along with cholera in other places, is quite certain. At Musselburgh, we are informed, that the greatest care was taken to admit none on the report, unless labouring under vomiting and diarrhoea, with spasms, or reduced to a state of collapse; and that while 416 cases only, had been reported as cholera, it was computed that nearly 1000 had been under medical treatment.*

POST-MORTEM INSPECTIONS.

Dissection of the subjects dead of this disease, has not been frequently performed: the same prejudices of the ignorant multitude have forbidden it here, as in all other countries. Yet so far as opportunities have been afforded, and these have been few indeed, the same general appearances, and similar varieties, in different cases, have been observed in this country.

The entire absence of faecal matter in the contents of the intestines; the presence, in greater or less quantity, of matter such as the peculiar evacuations; the serum-like fluid, more or less abounding with floculi of coagulated albumen, which are occasionally

* Since that period diarrhoea has been pronounced by the Board as the *first*—and we may add, as very often the last and only stage of cholera.

found in such quantity, as to line the mucous membrane with a tenacious substance, like paste; an odour of purifying mucus, somewhat like that of offensive lochial discharges, occasionally present; the serous fluid being frequently more or less tinged with blood, and that of the stomach often mixed with the latest ingesta; the upper part of the duodenum often slightly tinged with bile; frequently contractions of different portions of the colon; occasionally introsusceptions; the gall-bladder distended with unhealthy bile; its ducts sometimes strictured, and the urinary bladder empty and remarkably contracted.

The mucous membrane of the alimentary canal generally somewhat softened; sometimes of an unnatural paleness throughout, but oftener having various portions tinted of different hues, from the pale rose, to dark brick-dust and slate colours, as venous or arterial injection predominates; patches of ecchymosis and arborisations of the larger branches are frequent; but the most common appearances have been a red or purplish speckling of the membrane, generally over the whole, or more apparent in some parts than others; or an injection confined to the prominent parts of the rugæ of the stomach and valvulae conniventes of the intestines. Sometimes these different appearances are scattered throughout the whole extent of the mucous membrane; at other times the stomach alone is coloured, and the intestines pale, or the stomach pale, and different portions of the intestines darkly injected; however, these appearances are most frequent about the smaller extremity of the stomach and lower portion of the ileum. The venous trunks of the stomach and intestines are generally found greatly engorged; such also frequently takes place with the liver and spleen, and almost in every case in the *venæ cavæ*, and auricles of the heart. The blood remaining fluid, of an exceeding dark and peculiar consistence and adhesiveness, likened by some to treacle poured over the cavities of the heart. The lungs frequently exhibit a remarkable shrinking, like that of the skin and subcutaneous tissues (which led in India to the body being opened under water, to ascertain if air existed in the cavity of the pleura), then blood of the same dark hue; frequently they are engorged so as to resemble hepatisation somewhat, but still crepitous and lighter than water. The obstruction of the bronchiæ by peculiar secretions has not here been noticed amongst the cases from the North of England: the brain of two only has been examined; in one the vessels were very turgid, and half an ounce of serum was contained in the lateral ventricles; in the other, a very highly injected state of the vessels external to the brain, and in the cortical substance of the upper parts of the hemispheres, and in the cortical substance or upper part of the medulla oblongata was found, with depositions of lymph upon the surface of the brain and cerebellum, and five or six ounces of serum in the base of the skull.

Turgescence of the vessels of the brain and spine has been at all places a very frequent appearance, and serous effusion beneath the arachnoid in the cavity of the cranium and spinal canal, and in the lateral ventricles. It has seldom been observed how often these appearances have existed; but in the report of Dr. Kumes, from the Mauritius, decidedly the best of any which have yet been published, as affording the greatest extent of information on the many important considerations connected with the cholera, in 13 cases, where the brain was examined, serous effusion was found in all but two, one of which appeared natural, the other was mangled by an officious orderly during a momentary absence of the operator, and in one half of the cases where the spine was examined there was effusion under the dura mater of the cord, and the veins generally turgid.

It has been a general complaint, that the state of the organs after death has thrown no light on the nature or causes of the disease, and that they afford no explanation of the severity of the symptoms. It is true that they do not explain these, as the inflammation, tumefaction of the membrane, and fibrinous effusion in croup does the peculiar affection of the voice, and suffocation met with in that malady; but they do throw as much light, as post-mortem examinations in general, on the seat and nature of diseases; and this instance may serve as a useful comment on the present mania for the exclusive cultivation of morbid anatomy: we feel and acknowledge its great advantages, and the precision in this obscure science, which is derived from such researches; but the man who wishes to treat disease successfully, must not consider his only aim and object to be the knowledge of the various morbid changes which take place in the structure of different organs, and of the symptoms by which they are distinguished; his researches must be directed beyond this—to the laws of vital actions; to the manner

in which they are disordered, and to the agents capable of restoring them to their healthy state.

We regret exceedingly that any idea of post-mortem examinations being of little utility in investigations into the nature of the disease should have thrown a damp on the interest with which they have been prosecuted, and thus have deprived us of much valuable information. It is, unquestionably, important to ascertain if any connexion exists between the various fatal forms of the cholera, and the different pathological conditions of the organs affected: but on this subject little or nothing has been added to the observations contained in the Bengal Report; namely, that in the bodies of those who died in the earlier stages of the disease, hardly any unhealthy appearance was observed, the intestines, stomach, &c. being paler than usual:—but in the more protracted cases, a greater or less degree of injection of the mucous membrane, with occasional ecchymosis, was the most frequent appearance. It has also been observed, in some cases, where the violence of the spasms proved the most prominent symptom, that the mucous membrane exhibited that appearance, approaching nearest to inflammation. This interesting and important enquiry remains open to those at present engaged in investigating the nature of this disease, and we hope to be enabled to lay before our readers much valuable information on the subject, in our next number.

The relations or differences existing between the common cholera and the present epidemic, is the subject which next claims our attention.

Nothing is more common than to hear different practitioners assert, that this disease resembles none with which they were previously acquainted. We give them full credit for the sincerity of this assertion, and at the same time take the liberty of asking, what was the extent of their previous knowledge of all the different forms and grades of the common cholera. This question will best be answered by a comparison of the symptoms of the two diseases.

The diagnostic was first founded on the rice-water appearance of the evacuations:—those of the common cholera were supposed to be always bilious. This was an egregious error, although committed by Cullen. Later observations have shewn, that evacuations, of the precise character of the former are common in the latter disease. We refer to various cases published in the medical journals since this question became agitated, and we extract two others from the very valuable work of Mr. Thackrah.

"In September, 1825, a debilitated female, attended by Mr. Corsellis, was seized at three a. m. with vomiting and purging. Most distressing cramps speedily ensued; the surface became cold; the countenance sunk; and, to use the phrase of the woman who attended her, 'was all blue as violet.' *The stools were colourless*—she could not retain them. She died about 8 in the evening, 17 hours from the commencement of the urgent symptoms. On laying out the body, the women particularly remarked its blue, black, mottled appearance. *One leg remained flexed by spasm, its foot resting on the shin of the other.*"

It is of little importance now to trace the origin of this false fact, but we may remark that the same error and contradiction is of very ancient date. Hippocrates,* Celsus,† Cœlius Aurelian‡ and Galen,§ all derive the word cholera from χολη, yellow bile. Celsus says "intestina torquentur, BILIS supra infraque erumpit, primum AQUÆ similis, deinde ut in ea recens caro lata esse videatur, interdum alba, nonnunquam nigra vel varia. Ergo eo nomine morbum hunc χολέγαν Græci nominarunt."

This "aquaæ similis" puzzled Alexander Trallian,|| who in consequence seeks another derivation from χολᾶς, intestines, because, he says, bile is not always ejected, but frequently even a serous and pituitous humor. These discrepancies Riverius attempts to reconcile by arguing that, although bilious humors are not always ejected, yet they are acrid, corrosive and corrupt, approaching the nature of bile. Arêteus remarks, that the dejections are pituitous and sometimes bilious. After this time observation slumbered on the question, until the alarming violence of the present epidemic again raised the agitation.

Another diagnostic has been formed on the frequent recurrence of diarrhoea. The common cholera, says the advocate for this, always makes its attack suddenly—we are again obliged to Mr. Thackrah|| for the means of refuting this assertion.

* Hippocrat., 7 Epid. Sextus 19.

† Celsus, B. 4, ch. 11.

‡ Cœlius Aurelian, lib. 3, ch. 9.

§ Galen, I Meth., c. 2.

|| Alexander Trallian, lib. 7, ch. 14.

¶ Thackrah, p. 34.

"In July, 1822, a stout healthy man was affected with laxity for about a week. It was not such, however, as to prevent him pursuing his usual active occupation. After chapel, on Sunday, he ate a dinner of rice, and drank a mug of beer; but half an hour afterwards, about one o'clock, he was seized with copious vomiting and aggravated purging. The dejections were light colored and muddy. In an hour his face was contracted, cold, and livid, and, to use his wife's phrase, 'nipped like death,' and the circle of his mouth was purple. Thinking her husband dying, she sent an urgent summons for medical assistance. Visited between 3 and 4 p.m.; he was in a state of great exhaustion; suffering from severe cramps; his countenance sunk, haggard, and purple; pupils contracted; surface of the body unusually cold, and covered with a clammy sweat; pulse not to be found at the wrists, and in the carotid beating weakly, 155; voice lost; evacuations from the bowels wholly destitute of bile. Mr. Corsellis, then my pupil, remained with the man all next day, assiduously employing the remedies prescribed. For 7 hours there was no improvement, no increase of temperature, no pulse at the wrist, and voice audible only when the inquirer's ear was close to the patient's mouth. After this time, however, there was a slight re-action, and this progressively advanced. Stools were procured of the colour of gingerbread. It was particularly remarked that, for three days from the attack, no urine was voided. This man is alive and healthy at the present time."

"My excellent friend and quondam pupil, Dr. Whytehead of Beverly, has referred me to a case which occurred while he was with me, in the year 1825, and of which I regret that I cannot find the details recorded. A man was attacked with violent symptoms of cholera at 2 o'clock in the morning, and sunk at 10—eight hours consequently from the invasion of the disease. On post-mortem examination, our principal remark was the large quantity of albuminous matter in the small intestines. The stomach was greatly contracted."

Nor ought we to pass by the observation, that although, in the present epidemic, a spasmodic stricture of the gall-ducts generally prevents the intermingling of the bile with the other secretions from the mucous membrane of the alimentary canal, yet such is not always the case. The Indian reports, and all others collected from an extensive series of observations, afford examples, not unfrequent, of the evacuations being more or less coloured with bile, and sometimes even very darkly. We ought not to forget that the disorder of the biliary secretion, whether retained or evacuated, is at least as frequent in this as in the common cholera, the greater or less distention of the gall-bladder with dark green unhealthy bile being one of the most invariable of the post-mortem appearances; and profuse evacuations of this fluid are one of the most frequent occurrences in recovery from the present epidemic. The following conclusions appear to us to be correct. 1st. That in both the abovementioned diseases, the secretion of bile is variously affected in different cases; in some, greatly disordered in appearance and quantity, in others not perceptibly: for we have witnessed cases of cholera, of great severity, in which the peculiar sero-flocculent secretions have been present, without being followed, on recovery, by any evacuations marking the presence of bile, unusual in either quantity or colour; and such cases have also been observed during the present epidemic. Secondly, if there is any difference in these respects between these diseases, it lies in the greater frequency of the spasm of the gall-ducts in the one than in the other.

The quantity of the discharges has also been considered an important distinction; the buckets-full of the secretion in common cholera have been pointed out, in opposition to the small quantities evacuated in many fatal instances of the other disease, forgetting, at the same time, that the latter has presented cases, where the evacuations have been as profuse as in any of the former; and that, even here, this symptom is met with in nearly as great variety.

If any one feels dissatisfied with the evidence of the single cases which have been brought forward, we can shortly collect him more. At present it is necessary to economize time and paper.

For the ignorance of the different forms and varieties of common cholera which has hitherto prevailed, the following facts afford a satisfactory explanation. First, this disease is, as compared with others, of unfrequent occurrence; the experience of almost every practitioner not affording him the opportunity of witnessing all its varieties. Secondly, the most plain and palpable phenomena are usually passed by unnoticed, until some question arises to direct the attention to them.

Besides this reasoning, in ignorance of facts, another very considerable source of error has arisen from the practice of selecting, as standards of comparison, the severest

forms of the present epidemic, and the milder ones of the cholera misnamed common. Thus, Dr. Barry (Reports of Debates at Westminster Med. Society) is reported to have pointed out, as characters which certainly distinguish the former of these diseases, the remarkable blueness, cold breath and tongue, extraordinary look of the eyes, sunk in their sockets, which appear excavated, excessive corrugation of the skin, tendons of the hands and feet as prominent as if all the intervening substance had been dissected out, which he had observed in cases of the present epidemic, and observes that, if seen before, they would have been described by Sydenham, Celsus, and others. We shall not attempt to explain why they have not been noticed by these accurate observers, or why medullary sarcoma, and many other equally remarkable diseases, escaped their notice; it is sufficient for us to shew that others have described such symptoms, if they have not.*

" In 1829, a young gentleman, after a few days' bowel-complaint, which was not severe enough to keep him from school, was suddenly seized, early in the morning, with great debility, vomiting, and fainting. When I reached the house, his face was contracted, purple, without warmth, and expressive of distress. The whole surface was cold; at the wrist no pulse could be found; in the carotids it was feeble. There was then neither vomiting nor purging; but the cramps were particularly severe, and he complained of great oppression at the stomach. About two hours after active treatment, the circulation rallied, and in the afternoon the urgent symptoms had subsided. He remained, however, for several days in a state of great debility, and it was longer before a healthy state of the secretions could be restored."

" A female, about 25 years of age, of a slender make, and dark complexion, who had been previously subject to attacks of pain at the stomach, was seized between one and two o'clock in the morning with sickness and pain in the stomach and bowels, purging, succeeded by vomiting. I saw her about nine o'clock. The countenance was pale, respiration feeble, pulse 110 and weak, the legs cold and occasionally affected with cramp, the sickness, vomiting, purging, and pain unabated. The matter last vomited was copious, consisting of a mucous fluid containing flocculent matter of a greenish tinge; the motion was scanty, of a mucous fluid similar to that yielded from the stomach, but the flocculi it contained were yellowish; no faecal smell could be perceived. She had made no water since the commencement of these symptoms, when a quantity of limpid urine had been passed. At two o'clock the symptoms continued unabated, the forehead was cold and damp, the eyes sunk and surrounded by a dark circle, the lips livid, the tongue a little furred, moist and cold, the hands pale and shrunk, the abdomen tender to the touch, and feeling as if it contained firm elastic masses. The least raising of the head from the pillow occasioned sickness and vomiting. The matter vomited was similar in appearance to that previously examined, with the absence of the greenish tinge of the flocculi; and a scanty stool, the only one preserved since the morning visit, was not distinguishable in appearance from the vomitings. The cramp had increased in frequency and force, the pulse was 130, and hardly perceptible at the wrist, the voice was tolerably firm. About six ounces of inky blood were with much difficulty obtained from the arm. It coagulated soon, was a little buffed and tolerably firm. After the use of active remedies, a copious vomiting, containing some alimentary matter, succeeded, the pain ceased, the pulse rose to 140, the countenance became coloured, and a calm, accompanied with a few minutes of sleep, succeeded, during which the orifice in the arm poured out a considerable quantity of florid blood. At seven o'clock in the evening I left my patient relieved of all her urgent symptoms. The vomiting occurred twice during the succeeding night, but did not occasion any distress, and she gradually recovered from her state of exhaustion."—(Thackrah.)

It is apparent that no symptom or combination of symptoms, have been described in the one, which have not also been found in the other. Has the present cholera been accompanied in its course by diarrhoea and fever? so has that cholera with which we have been always acquainted! The farther we examine into the nature of these diseases; the constitutions susceptible of their influence, and the circumstances which excite their attack, the stronger we find the evidence of their identity in all things, except the extensive range and augmented severity of the present epidemic, from which the correct inference to be drawn is, not that this disease differs in nature, but in the degree of its severity; not that it is produced by different, but by more widely diffused and more violent causes.

* See our extracts from Frank and others.—Ed.

RATIO SIGNORUM.

The peculiar sero-flocculent evacuations, the intolerable anguish, oppression, and feeling of intense burning heat in the epigastrium, the ardent thirst, and paroxysms of excruciating griping pains in the bowels, nausea and retchings, mark an affection of the mucous membrane of the alimentary canal. If no morbid change of structure, or striking alteration of vascularity, is present in every case to explain the severity of the symptoms, this is not contrary to our experience; in other diseases, changes of structure are sequela, not causes, of disordered vital actions, of which mere vascularity forms the least important part. Thus, in hooping-cough, and various other local diseased conditions, the natural sensibility and sympathies are highly exalted, without any perceptible alteration in the fulness of the vessels of the part, and little augmentation of sensibility is often found in conjunction with a highly-distended state of the capillaries.

The failing pulse, the coldness of the surface, the livor and shrinking of the external parts, and some portion of the oppression of respiration, belong to disordered functions of the circulating system, in which there is a remarkable failure of the heart's action, and equally remarkable *spasm of the capillaries*, combining to arrest the circulation, and the changes which take place in its natural course; the animal heat ceases to be generated in a great measure, so as to be diffused by the languid circulation; the very breath becomes cold; and although an internal burning is complained of in the bowels, the same is also frequently the case with the surface, the patient tossing off the bed-clothes from a sense of intolerable heat, when his limbs are cold as marble. The blood becomes purple and exceeding thick; there is a rapid transudation from the vessels of the skin, and even from those of the brain. There is likewise an affection of the muscular system, spasms of various degrees of intensity, from the slightest cramp to an agony little short of tetanus. By this the muscles of the abdomen and the diaphragm are frequently affected, augmenting the difficulty and oppression of respiration.

With the exception of ringing of the ears, head-ache, and some few other symptoms too unimportant to require notice, the only affections of the nervous system are, giddiness and deep prostration, arising from exhaustion, pain, the disorder of the heart's action, and changes which take place in the blood.

Of these disordered functions of different classes of organs, the primary and most essential is that of the mucous membrane of the alimentary canal: the spasms may be wanting or severe; the asphyxia may be excessive or absent, little more affection of the circulation than that from an ordinary purgative taking place; but this is always present in the almost infinite variety of forms and grades assumed by this epidemic. Viewing it always preceding these other symptoms for a longer or shorter interval, and knowing the heart's action to be so powerfully influenced, both in the healthy and diseased state, through impressions received by the mucous membrane of the stomach and bowels, of which sinking during abstinence, and rising and quickening after food, palpitation from irritation of the stomach, and becoming exceedingly weakened and retarded by the paroxysms of pain in colic, are instances: noting the resemblance of the phenomena of this disease to the operation of an emetic, and particularly the observation of the total failure of the pulse, *following directly upon the accession of a paroxysm of severe pain*: we can have little hesitation in attributing the failure of the heart's action to this cause; if the effect is great, the agent is violent and fully adequate to produce it. Indeed, a pain equally severe in any part of the body, independent of the powerful sympathies existing between the stomach and the centre of the circulation, is capable of producing syncope in most people, and some are thus affected by very slight causes. The oxygenation of the blood becomes imperfect, and it acquires a very singular insipidation. Some have thought that the cause of the latter phenomenon was to be found in the drainage effected by these profuse secretions. It has been asserted to be deficient in its saline constituents, which abounded in the evacuations; this is too delicate a matter to be decided from the small number of experiments yet performed; and, with regard to the drainage of watery particles, we are bound to confess that it is, in a great measure, contradicted by other observations. Evacuations the most profuse, such as the bucket-full, *suddenly* discharged in common cholera, are often attended with very little of this effect; and it has no uniform relation to the quantity secreted, whether retained in the bowels or discharged, in cases of the present epidemic. Particular observations made here, with a view of throwing light on this question, have not been pub-

lished; but, from the descriptions of cases we have given before, and from all which have been published by others, it appears that Mr. Scott's remarks apply to the epidemic in this country, as well as to that of Madras. After observing that the quantity of clear fluid discharged is sometimes very great, and, if it were to be uniform, it would readily explain the weakness, thirst, and other symptoms; he adds, "nevertheless it is unquestionable, that the most fatal and rapid cases are by no means those which are distinguished by excessive discharges. That these discharges must diminish the serum of the blood is certain; but, from observations made on the blood in highly-excited states of the circulation, in which it is found that the fibrine becomes actually more fluid than the serum, diluting the whole blood, whence it finds a more ready passage through the capillaries; also the fibrinous portion becoming thus more readily transfused. From this fact, taken together with the above, it is highly probable, if not absolutely certain, that this inspissation of the blood arises *chiefly* from some change in the state of its fibrinous constituent, induced by the languid circulation, and probably influenced by the shock on the nervous system. After death from blows on the stomach, the blood remains fluid; likewise after fatal mental emotions, electricity, and many other agents. *The blood no longer possesses the power of acting on the oxygen of the inspired air to the usual extent.* From the obscurity which at present involves the physiology of this function, we can at present offer no further explanation, than by alluding to the close connexion which exists between the different parts of the body. A severe injury cannot be done to any one organ, and particularly to those of the nervous system, nutritive, or circulating and respiratory systems, without greatly disturbing, if not altogether, for a time, overturning the functions of the rest. The oxygenization or decarbonization of the blood is certainly, of all, the most essential to life, and the most independent of all of them, but assuredly not beyond their influence; and the fact remains the same, whether the agent connecting them in this close union be the nervous power, or some other thing, at present concealed among the mysterious phenomena of life."

The Constriction of the Capillaries. The function of these vessels remains, for some time after the death of all the rest. When the heart is enfeebled, or ceases to act, they carry forwards their contents and contract, inducing the physiognomy so well described by Hippocrates; and there does not appear to be any reason to believe this organic contractility to be augmented, in any extraordinary degree, in cholera. This apparent spasm, to which we have before alluded, appears to be referrible to long prostration of the heart's action, and the derivation of the blood to the abdominal cavity.

In alluding to the different varieties of this affection of the circulation, we noticed the fact, that some persons are more readily influenced by pain and other agents than others. We have known children faint at the sight of blood, and many persons from the slightest pain, while the power of endurance in others is almost incredible. This fact may assist in explaining some of the cases of sudden prostration which occasionally take place in persons apparently very robust without a proportionate increased severity of the abdominal affection; but the majority of persons *so seized* are of a present health and constitution debilitated by various causes; by previous sickness, long habits of intemperance, a previous day's debauch, excessive fatigue, sudden grief and anxiety, deficient nutrition and protection from the seasons—all agents rendering the heart's action liable to be prostrated by slight causes. And we also find that atmospheric influences, in some unknown way, so operate on the body that very slight excitement or local irritation will powerfully disorder the whole functions of circulation, and the healthy changes which take place in the blood. There is reason to believe that this influence has greatly contributed, also, to modify the forms of this disease, particularly in relation to the intensity of the effect produced on the circulation by the affection of the mucous membranes, both in the stage of collapse and consecutive fever. Thus, we find this fever prevailing more in some particular localities, and taking on the type of the prevailing one of the season; being in Bengal of a bilious remittent form, and typhoid in parts of Russia and England.

There appears reason to refer the spasms of the voluntary and respiratory muscles also to the disorder of the mucous membrane. They seem to be most violent the nearer this approaches an inflammatory character. In India they were observed most particularly amongst the Europeans, and it appears that bleeding was of most service in those cases where they formed the prominent symptom, as in Dr. Burrel's practice; and from the same observations by others we have before observed, that some enquirers

found in dissections of patients where they had been most violent, a bright arterial injection of the mucous membrane, but it has not been ascertained to be an invariable connexion. They exist in common cholera in equal intensity, and there does appear, from the observations of Baron Larrey on Tetanus, and the prevalence of this disease in Barbadoes and other torrid climates, that peculiar influences of the atmosphere do induce a state of the system in which the slightest local irritation, whether of a wound or disordered contents of the alimentary canal, are capable of exciting the severe and mysterious disease, tetanus.

The contraction of the bladder is in the healthy state induced by chills on the skin; it also is connected with the bowels, being supplied by nerves from the same origin. In females pregnant at the time of seizure, abortion is observed invariably to take place. Abortion likewise is frequently produced by violent purgatives, and may be referred to connexion through sympathies with the stomach and bowels.

" We come, lastly, to the consideration of the nature and production of this peculiar affection of the mucous membrane of the alimentary canal. The whole of its functions are greatly disordered—secretory, sensible, and motive. For the seat of this disorder some look to the mucous membrane itself; others again, recollecting that in various affections the symptoms are referred by the patient to the sentient extremity of the nerve, although the diseased action occupies its trunk or origin, as in painful affections of the nerves of the face, and some cases of paralysis, where pain is experienced in the extremities—and finding the mucous membrane often pale, and to all appearance natural, it is no wonder that they should be led to seek its seat in an affection of the nerves by which these viscera are supplied. Dr. Loder of Moscow first broached this theory, and Dr. Delpech has lately supported it by dissections. In some few cases he has found an unusual hardening with or without infiltration and injection of the semilunar ganglia, the solar or renal plexuses, inferior portion of the pneumo-gastric nerve, and sometimes even the pneumo-cardiac plexus. He has displayed great ingenuity in deducing a ratio signorum from these appearances; but until the occurrence is found to be invariable, and the few cases at present examined by no means warrant this conclusion, we must be allowed to believe that the sentient extremity, not the origin or course of the nerve, is involved in this peculiar diseased action. Whether evacuated or not, the only constant and invariable occurrence in all cases of the disease, is the production of the secretion; and we have before shewn the error of that theory which supposes that injection of the capillaries with red blood must form a necessary part of all diseased actions where sensibility is highly exalted, because such is the case to a certain extent in inflammation. Besides, our knowledge of the pathology of the sympathetic and its ganglia is not sufficiently advanced to deduce any clear ratio signorum from such appearances."

By those who, like ourselves, consider the seat of this disease to be an affection of the mucous membrane, different theories have been invented to explain its origin; these we may divide into two classes. Some of these persons observing in the action of poisons upon this mucous membrane, previously in a healthy state, effects greatly like the symptoms of this disease, have put forth a speculation that it owes its origin to a poison generated by chemical changes in the matters contained in the stomach and bowels, (as an illustration of his ideas on this subject, one writer refers us to the production of a poison in German sausages—Dr. Ruck.) In this theory the affection of the mucous membrane is considered as secondary—the result of the action of this poison upon it. Other persons, taking for their guide the excessive disturbance of the functions, sensibilities, and sympathies, of different parts which take place in their local diseased conditions, as in various inflammatory, catarrhal, and other affections of different organs, have considered this diseased state of the mucous membrane as the primary affection, the cause of which some have believed to be a specific poison received from without, existing in the air, as malaria, or generated by the sick, and transmitted from one person to another, as the virus of small-pox and other diseases. These animal poisons have specific effects on different organs, as the contagious exanthemata, itch, and porrigo on the skin, that of hooping-cough on the membrane lining the air-passages, and the supposed poison of cholera on the alimentary canal. Others again observing diseased states of different parts of the body induced by the variations in the humidity, temperature, and electricity of the atmosphere, as pneumonia, pleurisy, catarrh, diarrhoea, fevers, and a great number of other maladies, have believed that this peculiar affection of the alimentary canal has been produced by the same influences, of whom the greatest number actually believe it to be a catarrh—that of the pulmonary mucous membrane is indeed ac-

accompanied by some constitutional affection marked by *excessive* sensibility, and consequently great disturbance of the parts sympathetically connected with this sensibility, namely, the muscles of respiration which are frequently thrown into convulsive action, and there is also an abundant pale secretion.

Of these different theories we may observe, that not a shadow of proof has been advanced for the production of a poison by chemical changes in the contents of the bowels. That of contagion we have found it most convenient to examine before. The existence of miasmata is unsupported by facts. That there is a peculiar affection of the mucous membrane is certain, and for reasons already given we believe it to be the proximate cause of the disease; but whether it is in its nature the same as the pulmonary catarrh, or some other affection *sui generis*, we must leave to be demonstrated by future observations. The occasional rapid attacks, and still more the rapid recoveries, are contrary to the course of *catarrhs*. The manner in which the sick describe their feelings is vague, and it is very difficult from them to ascertain the exact order in which the symptoms succeed each other. The following minute description of an attack of cholera by a medical friend who has suffered several times from the disease is of great value in these relations.

"For some days previous to each attack I experienced a slight degree of languor and dejection of spirits; particularly after dinner, which increased towards evening. I continued to eat as usual, but food lay rather heavy on the stomach. On the evening preceding the attack these feelings were somewhat augmented, accompanied by an unusual though slight sensation of irritation and load *in the bowels*, which increased towards night, and on the last occasion much offensive wind was discharged. After going to sleep as usual, in the middle of the night I was awoke by an indescribable augmentation of the uneasiness apparently throughout the whole track of the alimentary canal, with much load and oppression. I felt that if I could at once get rid of its irritating contents, I should experience great relief; (the same feeling that occurs to a less extent when nausea and vomiting is produced by food which offends the stomach.) Nausea and pain of the bowels rapidly came on as the action to expel their contents commenced. The pulse became low, the skin cold and constricted; and an indescribable prostration of strength came on with the first accession of griping pain and nausea, and these effects were increased on each fresh occasion—the peculiar feeling of great uneasiness augmenting each minute. In the course of half an hour the stomach had been unloaded of undigested contents by vomiting, and the bowels of very offensive faeculent stools—at first consistent, then more and more fluid as secretion took place, until they became quite watery. The feeling of load and oppression was now removed, but the accessions of spasms in the bowels and sickness continued to recur, although at longer intervals, when some fluid was discharged of a pale colour, in which subsided small portions of whitish flocculent appearance, leaving the supernatant fluid semi-transparent. There was very great thirst and feeling of heat in the bowels; but the stomach would not retain anything. When the sensation of a load in the bowels had been removed, and the paroxysms of pain became slighter, and recurring at longer intervals, the severe coldness of the surface diminished, and at length was followed by some degree of heat and moisture although readily chilled. These symptoms, with thirst and heat in the bowels, remained after the griping and purging had subsided—the only thing which now seemed to be borne by the stomach was tea without sugar or milk—its astringency was grateful, while the idea of any alimentary substance excited nausea. Slight purging of the same fluid continued through the day, but gradually declined. The weakness abated, and towards evening the stomach became capable of receiving a very small quantity of light bland food. The first subsequent faeculent evacuations of the next day were deeply tinged with bright orange bile. The cramps which occurred in both attacks were slight."

In this case the succession of phenomena was first weakness of digestion, induced by atmospheric influences, increasing until this function ceased to be performed—the mucous membrane became exceedingly irritable, taking on suddenly a violent spasmotic action to expel its disordered contents; after the expulsion of which, the commotion excited remained for a short time, as it does after a severe purgative, and then gradually subsided. The whole of the premonitory symptoms were however so slight, that they would probably have escaped the notice of most common observers; and the general appearances which constitute the chief part of the descriptions of others, could not be noticed by the patient. Here was a peculiar disorder of the mucous membrane, aggra-

vated by the irritation of its contents, and it does appear to us, that the phenomena and causes of the present cholera, although infinitely various in degree, are of the same nature.

TREATMENT.

In each country where this disease has appeared, we find a very different and opposite treatment recommended, as one proved by experience to be the best. In India, bleeding, calomel, and opium, were the favourable remedies. In Russia, a practice as inert as a few grains of the subnitrate of bismuth, in frequently repeated doses. In England, the mustard emetic. Again, in different countries, remedies contradictory as bleeding and transfusion, are proposed and made use of in full confidence. Heat applied to the body in every form, as well as the cold affusion. Drinks altogether denied, or ordered in unlimited quantity, both hot and cold. They have attempted to restrain purging and vomiting by the most powerful narcotics, enormous doses of opium; and they have also encouraged them by various emetics and purgatives. Some try to allay the irritability of the mucous membrane; others goad it with the most powerful stimulants, ardent spirits and ammonia—others place their reliance chiefly on the mild alkalies, soda and magnesia, to neutralize some imaginary agent; and, again, an indication has been found for acids: whilst many have trusted a trifling carminative, as essence of mint, or cajeput oil, to combat these alarming symptoms;—illustrating the remark of Sir William Crichton: “it is a most melancholy confession, but one not the less true, that after cholera has spread its devastations from Ceylon to Archangel, from Orenburg to Berlin, we are almost as far from a rational methodus medendi as we were when it first appeared on the banks of the Ganges.”

Of all this false experience the cause is the same as that which, in every age, has formed the chief obstacle to the progress of practical medicine; namely, the difficulty of knowing what would have been the course of the disease, if left to the operations of nature; and what part of the effect, whether good or bad, is correctly due to the treatment employed.

In our critical examination of the treatment employed in this country, it is necessary to bear this axiom in mind, and as an antidote to overweening partiality for the remedies made use of here, let us recollect the misplaced confidence of others.

Many a valuable remedy has been first suggested by a stupid or erroneous indication, therefore, it will be well to ascertain the practical effects of different remedies before enquiring into the principles which have directed their use.

BLOOD-LETTING.

This remedy requires the earliest notice, from the very great extent to which it has been used, as well as from the very favourable reports of its efficacy, from almost every country where the disease has appeared. It is unquestionably the most powerful agent made use of, whether with the intention of relieving congestion or removing the irritability of the stomach and bowels; but at the same time it is a remedy, unfortunately, capable of producing equally injurious consequences, if misapplied: an instance is given, in the case of Mrs. Fairly, before related; she was suddenly attacked by the disease, at 11 o'clock, a.m., Dec. 7. and had pills containing calomel, capsicum, and opium, immediately; at 12 o'clock she was bled to about 20 ozs. (Mr. Parson's report), after the bleeding, the pulse almost completely disappeared at the wrist; the symptoms of oppression, which had appeared just before the bleeding, rapidly increased, and she died in a little more than nine hours from the commencement of the attack, unrelieved by the assiduous application of brandy, cajeput oil, and a strong solution of the subcarb. ammonie; copious hot injections, the first of which contained two drachms of laudanum; frictions with hot flannels, and a sinapism to the stomach. We might bring forwards a number of other unfavourable instances, but this will be sufficient. The important question is, what are the circumstances under which it is beneficial: we regret that we are at present unable to give to this any satisfactory answer: the cases in which it was so successfully employed by Dr. Burrell, were remarkable for the severity of the spasms; and in the dissections were observed, great congestion of the veins of the abdominal viscera, and a highly injected state of the mucous membrane of the stomach and bowels.

In the very valuable report of Dr. Gibson, on the treatment of cholera in the North of England, it is observed, that where, in the second stage, the spasms are severe and

the pulse strong, bleeding should be practised as a general rule; but that several cases have run a rapid and fatal course, which were thus favourable to its use. In the early stage he recommends it also in young and robust subjects, especially where there is pain in the epigastrium. Other practitioners unite in expecting benefit from it in the very commencement of the disease, and here we must point out a source of error in estimating its value, and a shameful abuse of the remedy.

Since diarrhea forms the most frequent premonitory symptom of cholera, and no one can tell when the vomiting and collapse will supervene; since the number of these cases which do not terminate in cholera is greater than those which do, and of the latter but a small proportion take on the form of severe sinking of the heart's action; it is evident that the practitioner will erroneously infer, that bleeding has arrested the disease in those cases not terminating in cholera, and in those that do, he will have no suspicion that bleeding may have determined the event. Moreover, it is in the severe cases where a remedy is chiefly wanted, the slight ones will get well of themselves; and there are, indeed, unhappily, very few cases of cholera in which we can truly say, that any remedy has snatched the patient from the jaws of death. The following quotation from Rivearius, who flourished at Montpelier, before the time of Sydenham, is a literary curiosity, even if it did not so *remarkably agree* with the results of modern experience. After remarking on the danger of relapses, which occurring when the patient seems out of danger, not only deceive the uninitiated, but even sometimes the physician himself; he observes, this danger is to be averted, not only by restoring the strength by remedies before proposed, "but especially by blood-letting, which most powerfully *derives* and calms the hot and raging blood, and this is to be repeated twice or three times, if the strength is increased rather than lessened by the first. Yet some practitioners dare to bleed on the first attack, even when the strength is most prostrated, which they say is oppressed, not really weakened; but at this time blood-letting cannot be performed without danger, for the sick are sometimes suddenly cut off shortly after the use of this evacuation, not without bringing discredit on the remedy."—*Opera Omnia*, p. 287.

MUSTARD EMETICS.

The use of this remedy was first suggested by Dr. Gibson, and has been frequently employed in the North of England and Scotland, to such an extent, that it has been customary to give it in any bowel-complaint of the season, for fear that the symptoms of cholera should come on; although so great a favourite and so shamefully abused, we cannot find that it has come into general notice from any superior effects to the many other remedies which have obtained an ephemeral notoriety. In the first case, published by Dr. Lindsay, in the Cholera Gazette, the man had been ill 12 hours before he was brought to the hospital, *but* the skin and tongue, though cold, were not remarkably so, neither had the surface as yet assumed a livid hue; the patient also could still be roused, when spoken to, and pressure upon the epigastrium shewed he was still sensible to pain;—expressions which *imply*, without asserting, a more violent collapse, than a direct statement would admit of. Two drachms of mustard mixed with about eight ounces of warm water were got down, and for about 10 minutes a copious vomiting took place, after which the pulse was to be felt at the wrists, and other parts of the body, even soft not feeble; but, in about 15 minutes after, the patient was attacked with cramps, so violently, that he uttered piercing cries, and thrust his feet towards a large stone near which he lay in the hope of obtaining some relief from the pain he was suffering. When the violence of the paroxysms, for it was truly such, had in some measure subsided, the patient was replaced in bed, and though still suffering severely from acute pain, and evincing by his cries and his actions a strong degree of vitality, it was observed with surprise, that the heart's action had apparently ceased, and that no pulse was to be detected at the wrist, or any other part of the body. As the cramps ceased the patient became again quiet, and gradually assumed the ghastly appearance he had presented on admission. It was determined, therefore, to repeat the mustard emetic, and this measure, on being carried into effect, was again followed by similar results, namely, copious vomiting, and after that, restoration of the pulse, and of the natural colour of the lips. The warmth of the surface was maintained: at night, 40 grs. tinct. opii, and 10 grains of calomel were given: on the following day the pulse was 80, soft, distinct, and countenance natural; but he died on the fourth day of consecutive fever. This man did not die in the first stage, it is true, but the case was never one of

severe collapse. In others, it has failed to produce even vomiting, adding greatly to the agonies of the patient.

Copious injection of warm water into the rectum is another of the remedies particularly recommended in this country, and much benefit has been produced by it. The injection of oxygen gas was also suggested by Dr. Hunter of Edinburgh; but, besides a temporary excitement, no permanent beneficial effect has been obtained. The same observation applies to the inhalation of oxygen gas; in all cases where it has been tried, it has produced a well-marked temporary excitement, but no permanent benefit, nor was any other to be expected from it. The symptoms do not arise from any deficiency of oxygen in the atmosphere, or *deficient respiration*, but failure of the usual influence of the blood on the air.

Tobacco enemata have been used; the statements of their effects are contradictory. Mr. Caton observes that, in a stout man, in whom the symptoms of collapse and spasms were severe, and unaltered by the use of external heat, the mustard emetic and other stimulants, an enema of three drachms of tobacco, in half a pint of water, was followed by flushing of the countenance, moisture and warmth of the skin, and return of pulse proceeding to recovery. Several other severe cases have done well under its use, but in others it has failed, in some being followed by sudden death. Of various stimulating remedies, such as the subcarb. ammoniz. camphor, brandy, Cayenne pepper, there is little worth notice to add; they have been given in many shapes and variously combined, with no certain benefit, for in those cases where a remedy is wanted, they fail.

So much for the treatment of symptoms. When we reflect that this practice is directed to the effect, not to the cause, and that the mortality of the disease, on the whole, varies from about one-third to about two-thirds of the number taken ill, we shall see reason to infer, that it has been little influenced by any treatment recommended. If an empiric remedy had been discovered, there is no person by whom it would be more valued than by ourselves; but, until this is the case, it is our duty to direct our efforts to deduce a correct ratio medendi.

In our examination of the disease we have supported the opinion, that its proximate cause is a peculiar affection of the mucous membrane of the bowels, and that the rest of the symptoms are produced by sympathies existing between this membrane and the rest of the system. It is the presence of food in the stomach and chyme in the bowels, which, in the healthy state, excite their secretions and motions; and, in all their disordered states, the first and most powerful means which we can employ to quiet their diseased actions, is to obtain the evacuation of their contents. We, therefore divide this disease into two periods in relation to the treatment; the first previous to the expulsion of the whole of the usual contents of the alimentary canal, the second after this effect has taken place. Whilst a particle of foreign matter remains, the most important indication is to obtain their expulsion in the speediest and easiest manner possible. If symptoms of a loaded and oppressed stomach exist, by emetics; if otherwise, by purgatives. In the former class, the sulphate of zinc, solution of salt, mustard, tartar-emetic, sub-sulphate of mercury, and ipecacuanha, have been used, although often from an indication somewhat different; and, amongst the purgatives, there is scarcely any one which has not been employed. It is a question, whether the occasional benefit derived from calomel is not owing to its operating in this manner, although scarcely ever directed with this view, and generally in the second period, when the indication no longer remains. Castor oil has received commendations as great, from those who have employed it, as any other remedy has from its warmest admirers.—*See Edinburgh Medical Journal for 1826.*

From the history of cases in which various emetics have been used, there does not appear to be any proof of superior efficacy in any particular one, if we except Professor Reiche's use of tartar-emetic; and yet the extraordinary results of his practice require confirmation from other hands. The emetic best adapted to the milder cases is certainly ipecacuan, at once safe, speedy, and certain in its operation; and, in the more severe cases, none have yet been found better than this, or the tartrate of antimony. The explosive powers of the stomach, in some cases, become so far prostrated, that they cannot be roused by any agent: here it is our duty to refrain from increasing the sufferings of the patient.

It is in the premonitory stage of diarrhoea, that opportunity most frequently occurs for the use of purgatives, and none has been yet found superior to rhubarb, of which a single dose of half a drachm, in powder, with five grains of ginger, and one ounce each

of brandy and water has the best effect, when the bowels yet retain a considerable quantity of faeculent matter; but, if the major part of this has been evacuated, the strained infusion of the same quantity in two ounces of water, with a scruple of carbonate of soda and magnesia, is to be preferred. On the first accession of the cholera, when it makes its invasion suddenly, those only who, like ourselves, have taken the former remedy, or a full dose of the compound tincture of senna, can have any conception of the indescribable relief they afford. In the milder cases, the contents of the alimentary canal having been expelled, there is no further occasion for any other remedy, for a time at least. All are productive of mischief. The extreme irritability continues a short time; paroxysms of pain recurring, as the accumulation of even these bland, secreted fluids proves a source of irritation; but they recur at more distant intervals, until they cease altogether. The thirst requires to be quenched with fluids containing no alimentary matter; and all food should be avoided, until the healthy functions of the mucous membrane return, and then admitted in the most sparing quantity only.

Along with these remedies, the copious imbibition of watery fluids is beneficial; if they are rejected by vomiting, it does no harm; if they are not, they dilute, and assist the expulsion of the contents of the alimentary canal. It is far otherwise when great irritability remains after their contents are cleared out, then the less that is given the better; and again, when vomiting has ceased, but the thirst is extreme, they may be with benefit indulged in; the patient's own instinctive feelings being generally our best guide as to what liquid may be given with most benefit.

The benefit experienced from the use of these means will be greater the earlier they are adopted; and in those cases where they fail, no remedy at present discovered will succeed; the nervous system has received a shock, and the functions of life are arrested; we may prevent, but, like that of concussion of the brain, it will depend on other circumstances than our efforts if a favourable change succeeds.

From the known effect in colic, from the frequent contraction of the colon which takes place in this disease, and from the benefit which has resulted from its use, injections of warm water are valuable at any period of the complaint, but they must be used in great quantity to be productive of benefit.* Blood-letting, if we may judge from general experience, affords more relief in those cases where the symptoms of irritation predominate over those of prostration.

The important question is, what are the circumstances under which it is beneficial? We regret that we are unable to give to this any satisfactory answer. We earnestly recommend the subject to the attention of the many diligent enquirers now investigating the best treatment of this disease. It is customary to cite the practice of Dr. Burrel in India as a proof of the efficacy of bleeding. He states that out of 88 cases that were bled only two proved fatal.

In the last period, when the bowels contain nothing but their own secretions, we have especially to beware the nimia diligentia medici: great irritability in the mucous membrane still remains, and the effect on the nervous and circulating systems has taken place. It is easy to do irreparable injury, but difficult to produce any certain benefit.

CAUSES.

Besides contagion, there is none of the other known causes of epidemics which can have prevailed so offensively as distemperature of the atmosphere. At the present time we have not space to enter fully into the consideration of this question, which is indeed one of inferior importance to those of the nature and treatment of the malady. Neither have a sufficient number of facts been at present collected, to enable us to decide either for or against it. All that we can do now, is to expose many errors which have been committed in reasoning on this question, and to point out the proper course to be followed in the inquiry.

* In a case of colic which had for three days resisted all other means, purgatives aggravating the complaint and bleeding affording no relief, the disease was at once subdued by injections of warm gruel. Six pints were slowly injected, with the sensation of reaching the place of the stricture, and giving some relief; it returned in a short time unchanged. Immediately nine pints were slowly injected, this quantity being all that could be borne—from this very great relief followed, and it was allowed to return, bringing with it a small quantity of faeculent matter. A similar quantity was in the same manner repeated, and the pain entirely ceased—a full dose of opium was given—it did not subsequently return. The first evacuations were scalding and dark green.

The suggestion that the cause of this disease may be found in distemperate conditions of the air, was first derived from the belief that other epidemics are produced in this manner. Observation has shewn that pneumonia, pleurisy, and catarrh, are certainly often produced by the exposure of the body to the vicissitudes of the air; and in different seasons there prevail different diseases. With the rising temperature of Spring appear cutaneous complaints; with the declining temperature of the latter end of Summer and Autumn, affections of the alimentary canal come on; and when the cold becomes more intense, the respiratory organs suffer the most; catarrhs, pneumonias, and pleurisies are more frequent; and it is also remarked, that different years are dissimilar both in atmospheric conditions and in their prevailing diseases. What is the wonder, then, that the cause of the latter should be sought in the sensible qualities, temperature, moisture, and electrical condition of the former, especially since there is no other known agent to account for this effect? But here commence the difficulties of the enquiry. Our venerated Sydenham remarks that, "although he had observed, with as much diligence as possibly he could, the various dispositions of divers years, as to the manifest qualities of the air, that from thence he might learn the causes of this great variety of epidemic diseases, yet he received no benefit thereby; for he perceived that years which do agree as to the manifest temperature of the air are infected with various diseases, and so on the contrary." The thermometer was not yet come to sufficient perfection to afford him its unerring standard of comparison of different temperatures; but another observer, who had enjoyed its advantages, does not differ in his conclusions. Dr. Bateman observes, with regard to epidemic febrile diseases, "that no plausible cause has yet been assigned for their absence or prevalence; meteorological observations have thrown no light on this subject; and chemistry has not detected any change in the state of the air by which they might be explained;" and the observations of all other writers on this subject are to the same effect. Epidemics of similar characters appear when the present state of the air differs greatly in all respects, and the same present condition is not followed always by the same effects. In what are we to seek an explanation for these anomalies? Turning to the prevalence of particular diseases in different seasons, we find that, although catarrh, the most common of all maladies, is more frequent in Winter than in Summer, that single cases are to be found the whole year round, and that sporadic cases of almost every disease, apparently produced by atmospheric causes, are to be met with under every variety of condition of the air, and, on the contrary, in the severest of all non-contagious epidemic visitations, a certain number of the community have escaped. From these we learn that this complicated frame is influenced by a variety of circumstances, which enable the constitution to bear up against great vicissitudes of the atmosphere, or render it susceptible of the slightest changes. Amongst these we may enumerate, original peculiarities of constitution, the effect of preceding conditions of the air on the general health, and of every other agent capable of debilitating the body, which exist combined in such an infinite variety of proportions, that it is no wonder we have hitherto failed in establishing any general laws.

The degree of the effect of any fixed atmospheric condition differs in different individuals according to constitutional peculiarities and the state of the general health; and we maintain that the argument of Sir Gilbert Blane, "if any disorder affecting a whole community arises from some noxious principle in the soil or air, it must, in the nature of things, attack simultaneously all who are exposed to it," is founded in the utter ignorance of the manner in which operate the causes of all non-contagious epidemics; and that all the remaining arguments against the agency of atmospheric influences, which are founded on the occurrence of this disease in so many different climates, and under such great extremes of temperature, are good for nothing. Do not the common cholera, diarrhea, and dysentery occur at Archangel as well as Calcutta, at Moscow as well as Orenburg or London? and has not there prevailed, both for some time preceding as well as during the course of the cholera in England, a medical constitution of the latter end of the Summer, the Autumn, and Winter, producing bowel-complaints and fever as the prevailing diseases of the time? Were not these bowel-complaints more general and severe at those particular places where the cholera appeared? and has not the same circumstance been observed in every place where we have reports of the state of the general health during the prevalence of cholera at Riga, Moscow, Orenburg, Petersburg, Berlin, and in India? Has not the state of the weather in this country been the same as that under which such complaints are always here observed to prevail?

and have we ever been informed that the state of the atmosphere in other places differed in its general conditions from those under which bowel-complaints commonly prevailed in these places? Why should one person be affected with diarrhoea, another with mild, and a third with severe cholera, unless it be the same agent?

A. ——

(To be continued.)

VI.

EXTRACT OF A LETTER FROM DR. W. H. YATES.

Cambridge, 23rd March, 1832.

THE Cholera has broken out at Ely. Dr. Haviland was immediately written to about it, and being prevented going over himself, which he fully intended doing, he requested me to go. They are cases of decided malignant cholera. I am sorry I have not time to give you particulars; but I may state the heads. From Saturday 17th to Tuesday 20th, 10 cases—5 deaths. The general duration of the disease twelve hours—one, sixteen hours—and one, only ten and a half. This last was an infant, fifteen months old. There were two others—one, four, the other five years old;—neither of the three received any medical assistance; and took nothing but tea. Then there were two old men, seventy years of age—one a thresher—the other worked on the high road. All were badly off, ill fed, ill clothed, poorly lodged, general diet potatoes. The two old men were given to intemperance—one had been a soldier. The other cases all females, except one, a youth of seventeen, and a child, four years. Neighbourhood low, swampy alluvial soil, near the river—all the cases occurring in the same district, and confined to two streets in which nuisances abound—such as stagnant ditches, common-sewers and drains.* There is a deep dyke, into which the people empty various kinds of accumulated filth, and an open privy. Wherever there was a corpse, we found it had been laid out, and the people sitting round the fire in close debate; and always plenty of visitors. Great unwillingness to bury the dead earlier than is usual—little fear—great resignation. Those who had visited their sick friends, remained well up to the moment of my departure. Those who had been taken ill and died, could not be discovered to have had the slightest communication with the sick. The medical men are unanimous in their opinion that, at Ely, the disease has broken out independent of any intercourse with towns, &c., where the disease exists; and that it is not contagious—at least such is their impression at present. There are many poor at Ely on account of the numerous charities—no manufactories.

General symptoms—dizziness, vomiting and purging of a milky watery fluid—no faeculent matter, no bile, violent cramps of legs, arms, and body—blueness—no pulse—cold clammy skin—white pasty tongue, and cold—eyes sunk—no urine—but great inclination to pass water. In fact, there can be no doubt of the identity of this disease, and that in London, but various in degree, and the dissections prove it.

A great sensation has been produced here,—my return was anxiously looked for;—I was summoned before the Board to-day (the Vice-Chancellor in the chair.) I read them a very long and detailed report of the cases, and many particulars which I cannot here repeat; it is expected the disease will find its way to Cambridge. Since I was there, I understand there is another case (dated Thursday morning.)

Dr. J. Johnson.

W. H. YATES, M.D.

* Mr. Dendy, an accurate and philosophical observer, stated in the London Medical Society, on the 26th of March, that he was able to trace almost every case of the epidemic in Southwark and Lambeth to malarious localities, and especially to ditches. We are confident he is right.—ED.

VII.

CONCLUDING OBSERVATIONS ON THE EPIDEMIC.

THE more we have seen and learnt of the reigning malady, the more convinced we are that the observations made in the last page (304) of our last number, are correct :—namely, that the epidemic is a choleric fever, the first stage of which is diarrhoeal (or gastro-enteric); the second, asphyxial (or congestive); and the third, typhoid—or inflammatory. The first or diarrhoeal stage has prevailed for many months, and throughout a large range of society. In its milder grades, this diarrhoea is often no more than some derangement of function in the stomach and bowels—and is—the cholera of the rich. In the stage of regular diarrhoea, it is the prevailing malady of the middling classes who are predisposed to it by diet, habits, or idiosyncrasy. Among the poor and intemperate, it too often runs on to the asphyxial stage, from which, if they emerge, they encounter another trial for life, in the typhoid or symptomatic fever which almost always follows.

But while we acknowledge the operation of some general epidemic cause, totally unknown, as to its nature, we cannot but observe the facility with which the disease springs up in certain malsain localities, and the tenacity with which it clings to them afterwards :—thus presenting far more of the endemic than of the epidemic character. The right bank of the Thames, which was, not many years ago, a marsh, and is now the chief seat of disease, is a sufficient example. The same partiality for the banks of rivers and unventilated alleys has obtained generally in England—the same preference for the lower orders of society. Does it here mow down bodies of athletic soldiers as in India? Does it attack more of the nobility than of the mobility (proportionately) here, as it did in some parts of the Continent?—No.

In respect to the treatment, we would offer a few hints. The diarrhoeal stage is easily managed, where common comforts and proper medicines can be procured. Where these are wanting, the second stage will too often be superinduced, and prove intractable. In this second, or asphyxial stage, we would again admonish our brethren against the rash application of the Indian practice, employed, be it remembered, among robust European soldiers, who were not reduced by diarrhoea or enfeebled by bad food and poverty previously. We have reason to know that most of the experienced practitioners in Southwark and Lambeth, have now relinquished the attempt to restore reaction by bleeding in the cold stage. We certainly should prefer moderate excitation or an emetic, leaving Nature time to set up the balance of the circulation, as in cases of bad intermittents, rather than drain away the few pounds of blood already left in the body. We would advise as much cool drink as the stomach will bear, with a large dose of calomel to allay gastric irritability, and to prepare the way for restoration of secretion.

When reaction is established, we have a typhoid fever to encounter—and not seldom topical inflammation, especially about the head. Here the utmost care is necessary, not to stimulate too much by food or physic, under the impression of a name—typhus, or debility. Every organ and its function should be carefully watched, in order that the seat of local disease may be detected. The guarding against topical inflammation, and attention to the intestinal discharges are almost all that is necessary in the consecutive fever.

The question of contagion will, we apprehend, resolve itself into the proposition which we have long maintained—namely, that this attribute of fevers in general, is not an essential or primary character, much less a cause, of the epidemic. It is a contingency, capable of being *produced* by crowding, filth, and concentration of effluvia from human bodies—capable also of being *prevented*, or *dissipated*, if formed, by ventilation, cleanliness, space. In the diarrhoeal and asphyxial stages, we cannot believe it to be contagious—in the typhoidal or febrile stage, we see no reason why it should not be as contagious as fevers of a similar type—nor do we see reason for considering it to be more contagious than they.

Every case we see, every narrative we read, impresses us, more and more, with the influence of *locality*, in the production of the disease. As far as London is concerned, the banks of the Thames are the throne and seat of cholera and malaria. Look at the place (Ely) where it has broken out in Cambridgeshire. The poor are its victims; but predisposition and locality may reduce a peer to the condition of a pedlar or pauper, so as to take on the disease. This day (23rd of March) a lady died with all the symptoms of the prevailing epidemic. She lived in a locality peculiarly malarious, and where we have repeatedly seen intermittent diseases. She was seized with diarrhoea on Wednesday, and did not apply for medical advice till one o'clock on Friday morning, when the spasms and vomiting had come on. At five o'clock, the collapse supervened on the spasms and vomiting. At nine she expired. She was a weakly female, and the disease, we have no doubt, might have been easily arrested, if it had been taken in the diarrhoeal stage. Intermittent forms of the disease are daily presenting themselves to medical observers.

27th March, 1832.

VIII.

ADDRESS TO THE MEDICAL PROFESSION, AND TO THE PUBLIC GENERALLY.*

THE present alarm respecting the disease which is now said to exist in London and its vicinity under the name of Cholera, is maintained by some to be unfounded or exaggerated; while by others it is asserted, that this alarm is neither without cause, nor disproportionate to the danger. Whence such diversity of opinion may have originated, has not been ascertained; nor has it been discovered whether there be any reasonable cause for the prevalence of opinions so opposed.

This unsettled state of the public mind has been productive of consequences the most pernicious. Our national relations have been injured; our internal prosperity has been shaken. The medical profession have been aspersed by one party, as encouraging panic without cause; and by another, as concealing from the public eye the real nature and the full extent of the disease.

To clear the character of the medical faculty of these aspersions by enquiring into the actual causes of this general alarm, and to reconcile these conflicting opinions, a Medical Association has been formed, to investigate the nature, modes of propagation, extent and treatment of that disease, and lay candidly before the public the results of its inquiries. As this Association belongs to no exclusive party, it advocates no exclusive views. The practitioners, of whom it is composed, espouse no theory; they support no faction: their bond of union is the public good: their common object is the cause of truth. Their interests are promoted neither by encouraging excitement, nor by resisting just alarm. If the disease known under the name of Cholera exist in London, their object is to ascertain its extent, to elucidate its causes, to explain its management, and to restore the tranquillity of the public, by an honest statement of the truth.

An Association formed with motives so pure, and an object so important, can have no enemies but those of science and of mankind. They, therefore, look to the public for countenance, and to the profession for assistance. They more especially solicit the co-operation of the medical officers of parishes and guardians of the poor: As they intend no opposition, they anticipate no resistance. In the truest spirit of philanthropy have they been organized, and with the most rigid respect to truth and candour will all their labors be conducted. They feel

* Want of space prevents us from making remarks on this philanthropic Association. We hope and trust that it will soon embrace a large portion of the active, zealous, and intelligent classes of medical practitioners in this metropolis, and the country at large. From none others do we expect co-operation.—*Ed*

that the principles which they follow can lead them only to truth, and they are persuaded that the plan upon which these principles shall proceed, can scarcely fail to ensure ultimate success.

The proceedings of the Association shall at all times be open to inspection ; the register for the admission of members is now prepared for signatures ; and while they express the most friendly feelings towards such as may decline to join them, the Association earnestly solicit, and confidently hope for the speedy co-operation of all, who are zealously attached to the interests of medical science, and wish sincerely to promote the welfare of the human species.

LEONARD STEWART, M.D.—Chairman.

All Communications to be directed, post paid, to Dr. MORRIS, 17, Southampton Street, Strand, where the Register for enrolling Members lies open for Signatures.

BIBLIOGRAPHICAL RECORD.

1. The Cyclopaedia of Practical Medicine. Edited by Drs. FORBES, TWEEDIE, and CONOLLY. Part I. pp. 112, royal 8vo, double columns. January 1, 1832. To be continued monthly. Abdomen to Aueurism. Price 5s. each Part.

2. Thoughts on the Best Means of Lessening the Destructive Progress of Cholera. By JOSHUA BROOKES, F.R.S. &c. 8vo, pp. 15. January, 1832.

3. Die Cholera in Berlin, &c. By Dr. GODFRED REICH. 8vo, pp. 146. Berlin, 1831.

Reported on in this Number.

4. Ueber das Naturliche System der Practeschen Medicin. VON L. W. SACHS. Pp. 82.

5. Rencension der Annales Scholæ Clinicæ Ticinenses, &c. By PROFESSOR HILDENBRAND. 1830.

6. Die Grundlage der Heilkunde. By Dr. G. C. REICH, Professor of Medicine, &c. 8vo. pp. 298.

7. History of the Chronic Phlegmasia, or Inflammations, founded on Clinical Experience and Pathological Anatomy ; exhibiting a view of the different varieties and complications of these diseases, with their various methods of treatment. By F. S. V. BROUSSAIS, M.D. &c. translated from the fourth French edition, by Dr. J. HAYS, and R. E. GRIFFITH, M.D. of Philadelphia. Two volumes, 8vo. Longman and Co. London, 1831.

We advise all those who have not the original French work to avail them-

selves of this opportunity to peruse Broussais in the English language.

8. Observations on the Origin and Treatment of Cholera and other Pestilential Diseases, and on the Gaseous Oxide of Nitrogen as a Remedy in such Diseases, &c. By JOHN HANCOCK, M.D. Med. Bot. and Zoolog. Soc. &c. 8vo. pp. 64. 1831.

We neglected to record this in our last number.

9. Hints on the Constitution of Dispensaries, &c. By JOHN STORER, M.D. F.R.S. Consulting Physician to the General Hospital near Nottingham. 8vo, pp. 92. 1832.

10. The Anatomy of Drunkenness, By ROBERT MACNISH, Author of the Philosophy of Sleep, &c. Fourth Edition, small 8vo. pp. 266. M'Phun, Glasgow, January, 1832.

The 4th Edition of a work which one would expect the drunkard to fear, and the sober man to consider as inapplicable to his own case, is a strong proof that the book has attractions for both classes. The present Edition has been very materially enlarged by a variety of new and useful information. It will do more good than all the temperance-societies in Great Britain.

11. On the Portable Sudatory, or Het Air-Bath, &c. By M. LA BEAUME, Medical Galvanist, &c. 8vo, pp. 84. January, 1832.

M. Le Beaume has very much improved the Portable Hot Air-Bath.

12. On the Phenomena of Dreams. By WALTER C. DENDY, M.R.C.S. &c. Duodecimo, pp. 154. January, 1832.

This is one of the most amusing and scientific investigations of the subject which we have yet seen.

13. Memoir sur le Cholera Morbus de l'Inde. Par P. F. KERAUDREN, M.D. Octavo, pp. 39. Bailliere, 1832.

We recommend this pamphlet.

14. Address to the Members of the Hunterian Medical Society (Ed.) Delivered Nov. 6th, 1831.. By NATHANIEL ROGERS, Senior President.

15. Principles and Practice of Obstetric Medicine, &c. By D. D. DAVIS, M.D. Part III. pp. 64, with two plates. January, 1831. See Review.

16. Remarks on the Anatomy Bill now before Parliament, in a Letter to the Right Honorable Lord Althorp. By G. J. GUTHRIE, F.R.S. 8vo, pp. 8, sewed. Price 6d. Sams, St. James's Street, Jan. 1832.

17. Letters on the Cholera. By WHITELAW AINSLIE, M. D. &c. 8vo, pp. 44, sewed. Wilson, Princes Street. 1832.

18. The Modern Anatomy of the Human Spleen; with Strictures on Sir A. Carlisle's Theory, &c. By P. MAC NOLTY, Surgeon, &c. 8vo. Renshaw and Rush, 1832.

19. Cholera, its Character and Treatment; with Remarks on the Identity of the Indian and English, and a particular reference to the Disease as now existent at Newcastle and neighbourhood. By CHARLES TURNER THACKRAH. 8vo. pp. 60. Leeds, January, 1832.

20. Remarks on the History and Treatment of Delirium Tremens (from the Transactions of the Massachusetts Medical Society.) By JOHN WARE, M.D. 8vo. 1831.

21. A Series of Experiments Performed for the purpose of shewing that Arteries may be Obliterated, without Ligature, Compression, or the Knife. By BENJAMIN PHILLIPS. 8vo. stitched. pp. 66. London, 1832.

22. A Treatise on Physiology applied to Pathology. By F. S. V. BROUSSAIS, M.D. Translated from the French. By JOHN BELL, M.D. and R. LA ROCHE, M.D. Third American Edition, with Notes and copious Index. 8vo. pp. 656, Carey and Lea, Philadelphia, 1832.

This is a very valuable volume, and well deserves importation into this country.

23. A Letter addressed to the Lord Chancellor on the Study of Anatomy. By JAMES C. SOMERVILLE, M.D. 8vo, pp. 15. January, 1832.

24. Letters on the Cholera Morbus, shewing that it is a Non-Contagious Disease. By a Professional Man of thirty years' experience. 8vo, pp. 56.

These Letters are a republication (with additions, &c.) of the talented letters, signed Alpha and also Omega, in the Lancet, Courier, and other periodicals. The author is a physician of long experience and ample observation.

25. Observations on the Medical Treatment of Insanity. By ED. G. SEYMOUR, M.D. Physician to St. George's Hospital, &c. 8vo, pp. 95. Longman and Co. 1832.

26. A Critical and Experimental Essay on the Circulation of the Blood; especially as observed in the Minute and Capillary Vessels of the Batrachia and of Fishes. By MARSHALL HALL, M.D. &c. 8vo, pp. 187, with ten plates. Seeley, 1832.

27. A Brief Description of Surgical Apparatus; intended to accompany a Series of Delineations of the most important Auxiliaries of Surgery. By HENRY T. CHAPMAN, M.R.C.S. late House Surgeon to St. Bartholomew's Hospital. 8vo, pp. 115. London, 1832.

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29. A Treatise on Retention of Urine, caused by Strictures in the Urethra;

and of the Means by which Obstructions of this Canal may be effectually removed. By THEONORE DUCAMP, Doctor of Medicine of the Faculty of Paris, &c. translated from the French, with Notes and Additions. By WILLIAM M. HERBERT, M.D. 8vo, pp. 219, four plates. New York, 1827.

 We shall take some notice of this volume.

30. A Treatise on Surgical Anatomy; on the Anatomy of Regions, considered in all its relations with Surgery. Illustrated by plates, representing the principal regions of the body. By A. L. M. VELPEAU, M.D. P. Agiegè Stagiare to the Faculty of Medicine of Paris, &c. In two volumes, Translated from the French, with additional notes. By JOHN W. STERLING, M.D. M.R.C.S.L. &c. Vols. II. 8vo, pp. 456—523. Plates. New York, 1830.

31. An Account of the Beulah Saline Spa at Norwood, in Surrey; containing a description of its Medicinal Properties and Effects; of the diseases in which it is remedial, &c. By GEORGE HUME WEATHERHEAD, M.D. 8vo, pp. 39. 1832.

32. The Laws and Progress of the Epidemic Cholera; illustrated by Facts and Observations. By THOMAS HANCOCK, M.D. 8vo, pp. 112. February, 1832.

* * * We shall notice this work anon.

33. The Principles and Practice of Obstetric Medicine, &c. By DAVID D. DAVIS, M.D. Professor of Midwifery in the University of London. Part V. Price 2s.

 We shall notice this and the succeeding parts as they issue from the press.

34. Dr. Townsend's Chart of the Physical Signs of Diseases of the Lungs. Price 3s.

 A very useful chart for the young auscultator.

35. Practical Observations on the New System of Warming Dwelling-houses, Cathedrals, Churches, Theatres and other Public Buildings, with Hot Water, &c. By HENRY W. DEWHURST, Esq. Duodecimo, pp. 37. 1832.

 This contains much useful information for all concerned in the above subject.

36. The Dublin Journal of Medical and Chemical Science; exhibiting a Comprehensive View of the latest Discoveries in Medicine, Surgery, Chemistry, and the Collateral Sciences. 8vo, pp. 116. Hodges and Smith, Dublin, March, 1832, price 3s. 6d.

37. A brief Statement of the Advantages and Safety of Funigating Baths, &c. By J. GREEN, Surgeon.

38. Dissertations on Malaria, Contagion, and Cholera; explaining the Principles which regulate Epidemic, Endemic, and Contagious Diseases, with a View to their Prevention, &c. intended as a Guide to Magistrates, Clergymen, &c. By W. AITON, M.D. 8vo, pp. 72—220. March, 1832.

39. Hints relating to the Cholera in London. By THOMAS HODGKIN, M.D. &c. &c.

 This is in the form of a letter. It contains many judicious suggestions, ingenious reflections, good feeling, and good sense. Dr. H. objects to the formation of cholera hospitals. In this city, he thinks, they are worse than useless. Not one hundredth part of the patients can possibly be received into them. Dr. H. regrets that cholera patients have been refused admission into the common hospitals; so do we. Separate wards and separate nurses might have been provided for them, if such were considered necessary. We have only to look into the daily papers for instances of the shocking, monstrous, and unchristian effects of the doctrines of the contagionists and alarmists. Dr. Hodgkin deserves well of the public.

40. Introductory Lecture to a Course of Forensic Medicine, delivered in the Anatomical Theatre of St. Thomas's Hospital, November, 1831. By GEORGE BURROWS, M.D. &c. 8vo, stitched, pp. 32. 1832.

 A very able discourse; not less distinguished for the erudition than for the high moral and sound political feeling of the author.

41. Lectures delivered at the Mechanics Institution, 19th Dec. 1831, and 13th Feb. 1832, on Oxygen, Carbon, and Vitality, the three great Agents in the

Physical Character of Man. With remarks on Asiatic Cholera. By GEORGE REES, M.D. &c. 8vo, stitched, pp. 107. London, 1832.

 Very instructive and interesting Lectures. Some of the passages do honour to the heart of the Lecturer, and are but too applicable to the present times of luxury for an oligarchy, misery for millions.

42. History and Medical Treatment of Cholera, as it appeared in Sunderland in 1831, illustrated by numerous Cases and Dissections. By W. HASELWOOD, M.D. and W. MORDEY, Surgeon, in charge of the Cholera Hospital in that Town.

 Too late for notice in the present number.

43. Thoughts on Cholera Asphyxia. By ROBERT BREE, M.D. F.R.S. &c. 8vo, stitched, pp. 71. London, 1832.

 Very ingenious, but the author has never seen the disease.

44. On the Epidemic Cholera, and other prevalent Diseases of India. By SAMUEL DICKSON, Assistant Surgeon to the Royals, lately on the Madras Establishment. 8vo, pp. 143. Edinburgh and London, 1832.

 We may possibly take notice of this in our next.

45. Anatomical Demonstrations; or Colossal Illustrations of Human Anatomy. By PROFESSOR LEERIG. Translated from the German. Part 2. London. Published by A. Schloss, 103, St.

Martin's Lane, Charing Cross. 1831
Price 8s. 6d. each part, or 12s. coloured

 The present Part contains five large lithographed plates, representing the base of the brain and cranium, with the nerves, the origin of the optic, and the continuation of the white matter of cerebrum, cerebellum, and chord, illustrated by a vertical and horizontal section. This part equally deserves encomium with the former, which we noticed in a preceding number of the Journal. M. Schloss deserves well of the professional public, for his spirited attempt to import the minute anatomy of Germany into England. We shall continue to notice this series of anatomical plates as they successively issue from the press.

We will here avail ourselves of the opportunity of noticing the magnificent work of Mr. Swan upon the Nerves. It is indeed magnificent, and calculated to confer honour not merely on the individual, but on the anatomical character of the profession of Great Britain. If that work is not patronized by our public bodies, and by those private persons to whom fortune has been bounteous, then shame, we say, on one and all. The Medical Corporations must assist the author by purchasing a certain number of impressions. If they do not they will add one more damning blot to escutcheons, already far from too fair. It is but justice to the College of Surgeons to acquit them of illiberality on this occasion.

We had intended to have made more particular remarks on Mr. Swan's work. We regret that we have been prevented from doing so from having unfortunately mislaid it. In our next number we hope to be enabled to redeem our pledge.

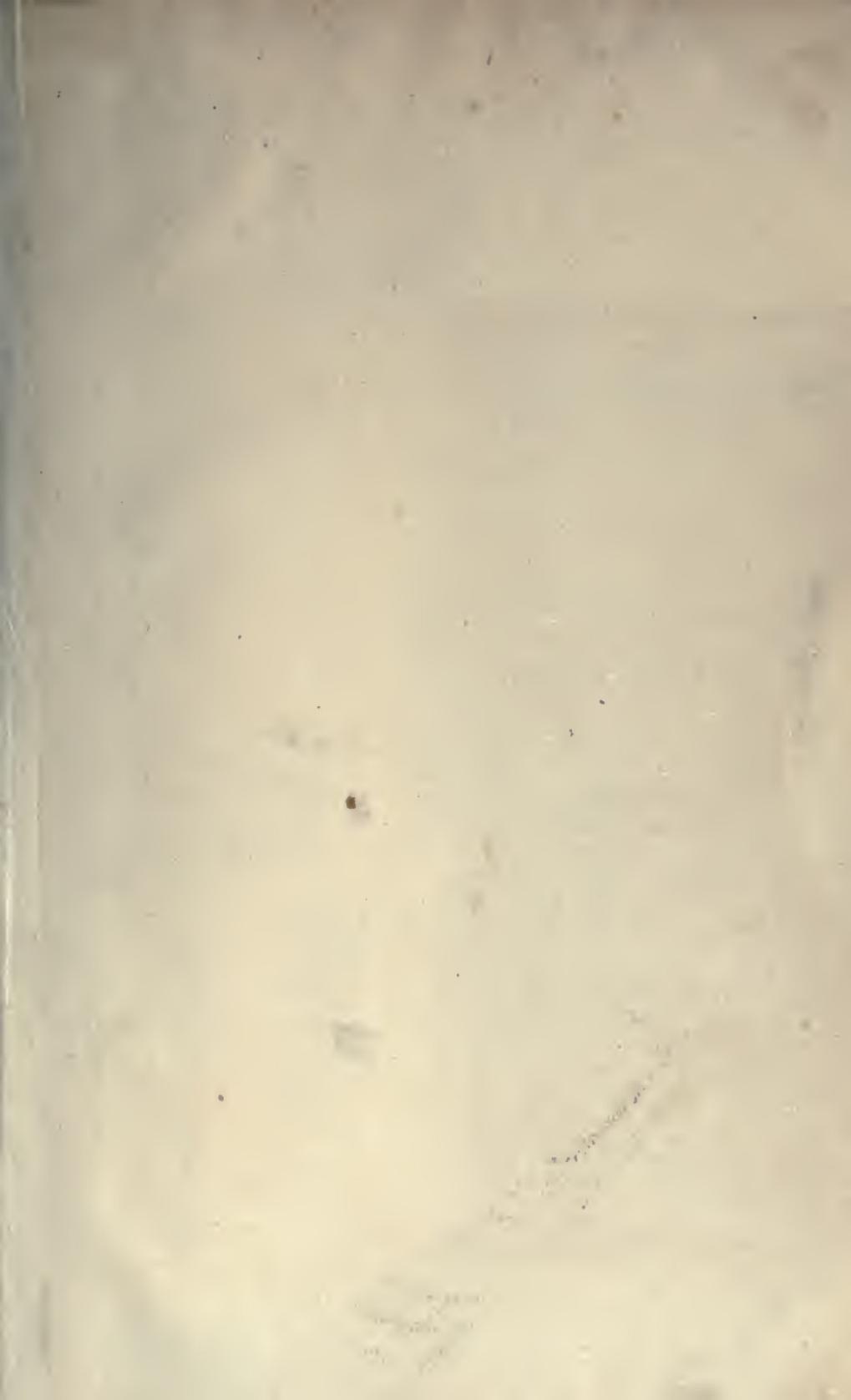
INTELLIGENCE, CORRESPONDENCE, &c.

The letter of J. M. C. is received, and he is requested to use his own discretion as to the extent of the paper on which he is employed.

A "constant reader's" case of sudden death, where the internal surface of the ventricles and also of the aorta was of a "brilliant vermillion colour," has been received and perused. We cannot deny that the colour in the above case was from injection of the vessels, nor assert that it resulted from imbibition. The heart is reported to have been "small and flabby," and as sudden death is not unusual in such conditions of the organ, we have hesitation in attributing the fatal event to the state of the lining membrane of the heart and aorta.

The fasciculus required by Mr. Heys near Wisbeach, is forwarded to Messrs. Rivington, as directed by Mr. H.

Mr. Green's gazeous mercurial inhaler, together with his apparatus for the hot air-bath, must be seen at his own house, as we cannot give a description of them.



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